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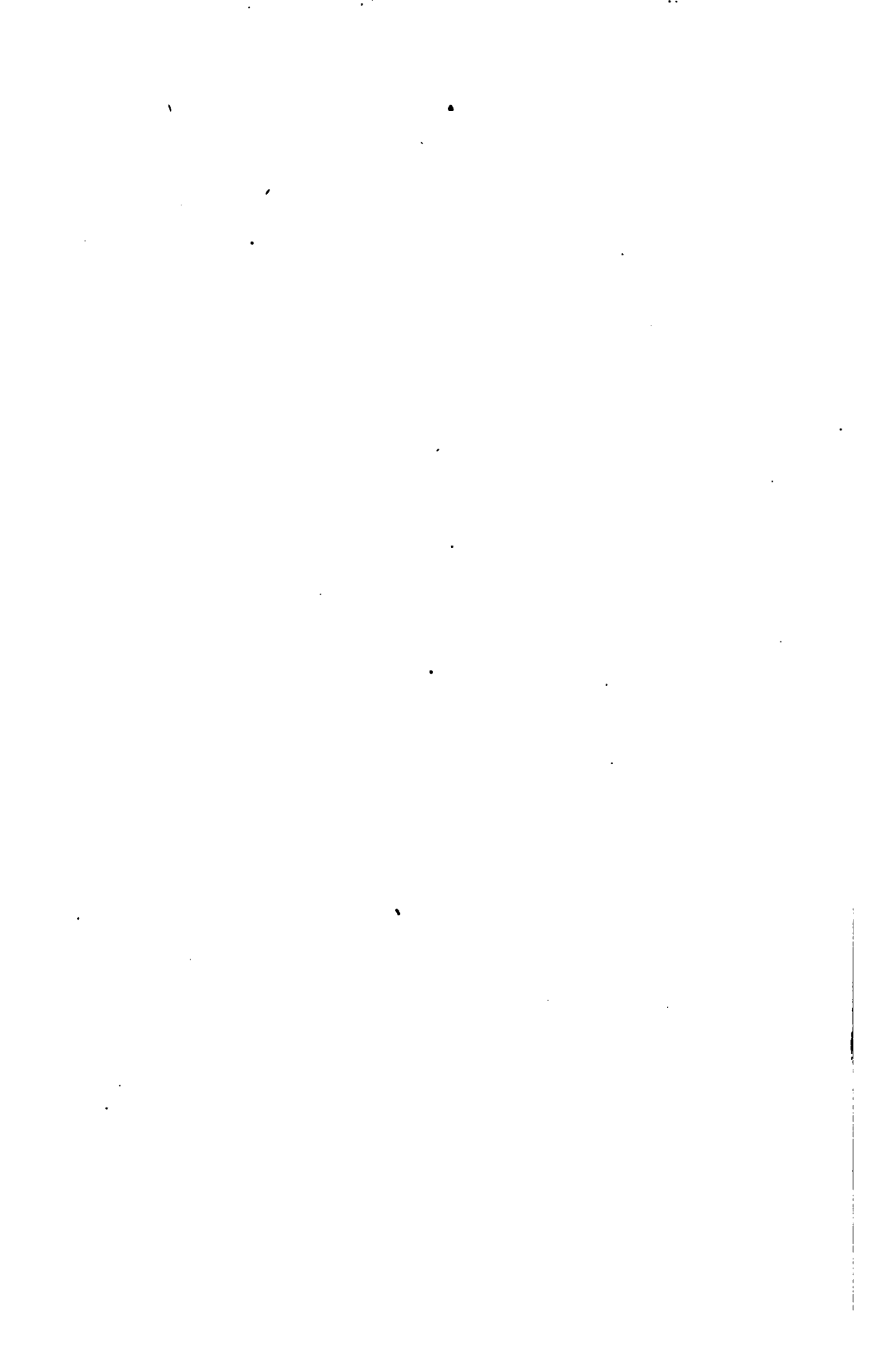
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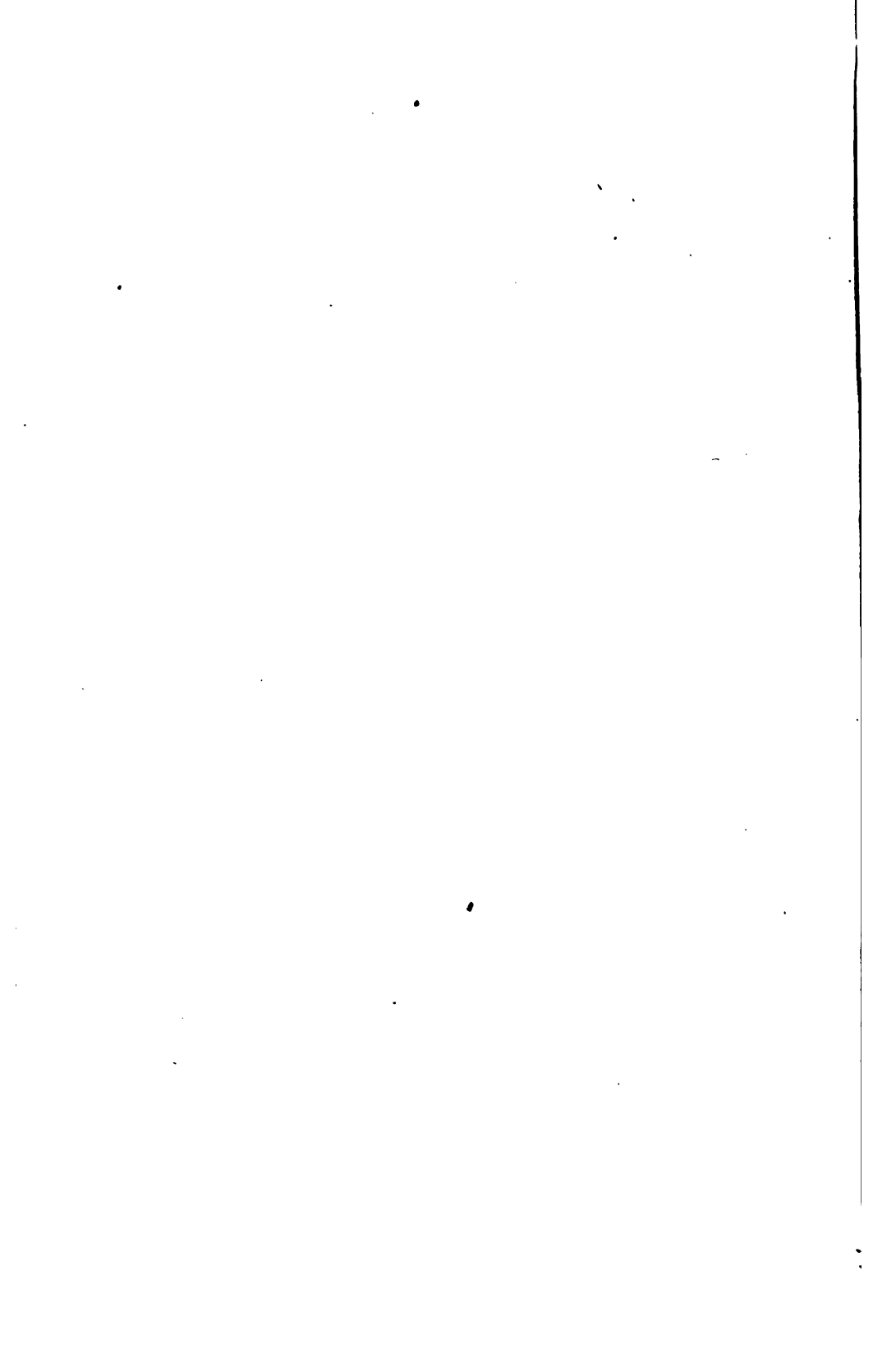
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COMMERCIAL RELATIONS OF THE UNITED STATES.

U.S. Bur. of Commerce
consular reports. 1895
REPORTS

(Nos. 1, 2, AND 3, 1880 AND 1881,)

FROM THE

CONSULS OF THE UNITED STATES

ON THE

COMMERCE, MANUFACTURES, ETC.,

OF THEIR

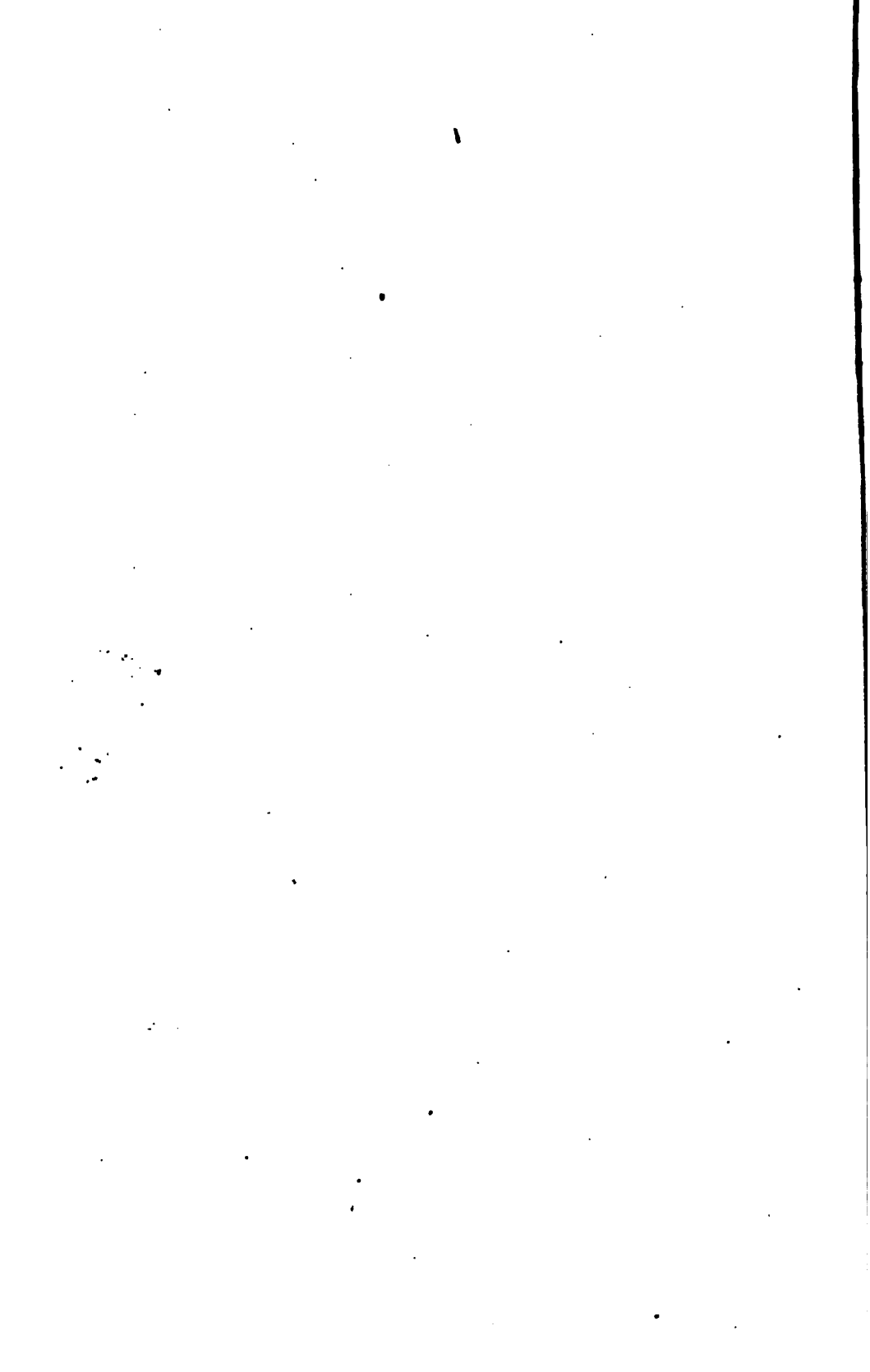
CONSULAR DISTRICTS.



PUBLISHED ACCORDING TO ACT OF CONGRESS.



WASHINGTON:
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1881.



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EXPLANATORY.

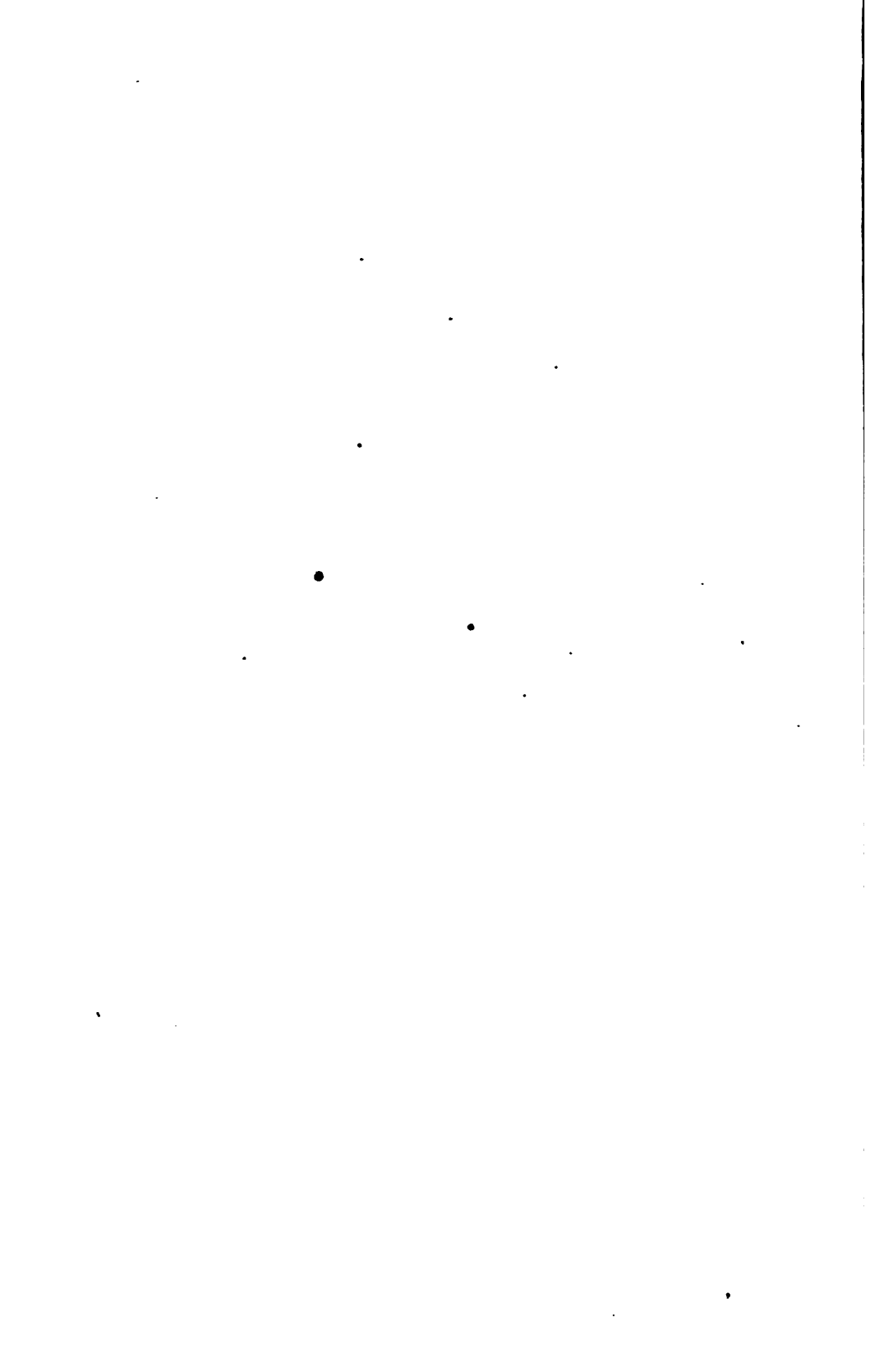
This volume embraces the contents of the first three numbers of the "Reports from the Consuls of the United States on the Commerce, Manufactures, &c.," of their consular districts, issued from the Department during the months of October and November, 1880, and January, 1881, and is published in accordance with the following resolution of the House of Representatives, concurred in by the Senate February 23, 1881:

"Resolved by the House of Representatives (the Senate concurring), That there be printed and bound in one volume 50,000 copies of the three numbers issued by the State Department of Reports from the Consuls of the United States on the Commerce and Manufactures, &c., of their Consular districts; 35,000 of which shall be for the use of the members of the House of Representatives and 15,000 for the use of the Senate."

Re. 4-10-1881
Instead of following the order in which these reports first appeared in print—as above noted—the Department, although no provision was made for revision, has consolidated them, by bringing those relating to the same continent, countries, possessions, and consulates, together, arranged according to date, with one table of contents, and one comprehensive index, instead of three, as would necessarily have been the case had the order of the first publications been adhered to.

DEPARTMENT OF STATE,

Washington, May 24, 1881.



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INTRODUCTORY.

Previous to the last session of Congress, with the exception of short abstracts given, from time to time, to the press, the only means of giving publicity to consular reports was through the annual volume of Commercial Relations. The delay incident hereto neutralized, to a large degree, the good which would have resulted from the immediate publication of many of these communications, while a large number of valuable reports were left unpublished altogether, and many others necessarily curtailed, in order that the annual volume might be kept within reasonable limits.

Appreciating the good results of the praiseworthy efforts of our consuls for the enlargement of our commercial relations in their several districts, and desirous of giving the country the fullest and most direct benefits of their labor, Congress, upon representations made thereto by this Department, at its recent session, made provisions "for printing and distributing more frequently the publications by the Department of State of the consular and other reports."

This action was taken in response to the wishes of the leading commercial communities of the United States, as expressed through the chambers of commerce of the principal cities, which bore testimony to the great value of these reports, and the advantages which would accrue from their more frequent publication.

As a necessary sequence to the foregoing action of Congress, a circular, under date of July 1, 1880, was issued by this Department to the consuls-general, consuls, and commercial and consular agents of the United States. The nature of this circular, and the scope of the proposed publications, will be understood from the following extracts:

[Extracts from Department circular of July 1, 1880.]

¹ This action of Congress enlarges the field of your usefulness, and your accomplished labors are a guaranty that you will respond to the expectations of the commercial and manufacturing communities of the country, and thus prove that you fully appreciate the very high compliment embraced in this national indorsement of your efforts for the enlargement of our commerce.

You are therefore requested to prepare and forward to this Department reports upon all subjects which may be calculated to advance the commercial and industrial interests of the United States, bearing in mind, however, while giving yourselves the broadest field for the accomplishment of the work herein assigned you, that your principal efforts must be directed to the introduction of American trade into, and the enlargement thereof in, your several districts.

It is the wish of the Department, where such a course is practicable and does not detract from the general effect, that each of these special reports shall embrace only one subject, with its necessary connections, of course, and that while diffuseness and repetition should be avoided as much as possible, the information given should be explicit and comprehensive, so that our merchants, manufacturers, agriculturists, exporters, and importers shall fully understand the peculiarities, wants, and requirements of the several markets, as well as the best methods of reaching the same, and that as little as possible may be left to surmise or speculation.

The frequency of these proposed publications will depend altogether upon the volume and value of the reports received; and as the number of these from any one consular officer must depend wholly upon his ability and efficiency, and upon the field of his labors, to some extent, it is expected that reports will be transmitted to the Department as often as each official has anything of importance to communicate.

The Department notes that while a majority of the consular officers have done their whole duty thus far in this regard, others have reported only at irregular intervals, while others again have remained totally silent. As there is no place, where the United States is officially represented, so insignificant as to be unworthy of commercial cultivation, the Department will henceforth expect reports from all its consular officers, and will not further overlook the silence of any.

The Department, being anxious to lighten as much as possible this extra labor imposed upon you, will no longer require duplicate copies of these reports. It is, however, desired that quantities and values should be given in American measures and in American money.

The annual volume of Commercial Relations will be published as heretofore; you will continue to prepare your annual reports therefor as usual, but the publication of these special communications will enable you to dispense in the former with all extraneous matter, treating therein of subjects pertaining only to what properly belongs to annual reports, as laid down in consular regulations.

In conveying to you, gentlemen, the foregoing public appreciation of your official labors, the Department takes much pleasure in adding its warmest testimony thereto, and it feels assured that our ever-increasing commercial relations with the various countries will still bear evidence to your continued efforts in behalf of American commerce in your several districts.

I am, gentlemen, your obedient servant,

WM. M. EVARTS.

The regular edition of Commercial Relations for 1879, making two large volumes, owing to the exhaustion of the appropriation for public printing, was not placed in the hands of the printers until after the expiration of the fiscal year 1880. This, together with the limited force available for this work, has delayed the issue of the first number of these Consular Reports until the present time.

Heretofore the Department saw no profitable object in demanding, nor had our consuls any incentive in preparing and forwarding hither, any reports outside of those required for the annual volume of Commercial Relations, there being no provisions made for their publication and distribution. Now that Congress has recognized our consular corps as a leading factor in the development of our foreign commerce, and enlarged the field of its usefulness, this issue of Consular Reports inaugurates a class of publications which cannot fail to become of signal importance to the agriculture, commerce, and manufactures of the United States.

DEPARTMENT OF STATE, *October, 1880.*

CONSULAR REPORTS

ON

COMMERCE, MANUFACTURES, ETC.

CONTINENT OF AFRICA.

AMERICAN MANUFACTURES IN WEST AFRICA.

REPORT BY CONSUL LEWIS, OF SIERRA LEONE.

I have the honor to write you regarding many new articles of American manufacture which have been imported from the United States to this place by the American house of Yates & Porterfield during the past year.

These articles find a ready sale, many of them being superior to other make, and are sought after in preference: American axes, hatchets, hammers, saws, hoes, chisels, augers and bits, cooking stoves, kerosene-oil stoves, nails, safes, sewing-machines, and hardware generally.

In roofing slates other countries cannot compete either in quality or price. Powder being put up in handsome varnished kegs is superior in appearance and strength. The only objection urged against American powder is, that it is not put in 4-pound kegs as well as 5-pound, as dealers claim that a 4-pound keg will sell for the same as a 5-pound keg; hence the advantage of other packages as against the American. The same objection is urged against American calicoes and cotton goods. The English cottons are put up in pieces of 12 and 20 yards, and sell for so much the piece, whereas the American cottons as a rule are in pieces ranging from 40 to 50 yards.

Twelve yards of cloth cut from a large piece is not as salable in this market as a piece regularly made up containing just 12 yards. This seems like a very slight affair, but it is a most serious objection in the way of an easy introduction of American cottons.

All the pine lumber used in the colony is imported from the United States.

American trunks (cheap grade) have a large and steadily increasing sale.

All imported provisions, save rice, come from the United States; as also hats, boots and shoes; chairs, tables, and furniture, generally; scales, soaps, both toilet and common; perfumery, clocks, patent stencil-plates, telephones, grindstones; canned goods, all kinds; Needham's musical cabinets, illustrated Bibles, steel engravings, street lamps, baskets, stylographic pens, and a great many small articles too numerous to specify.

Many of the above articles have been introduced through the influence of the representations made in the export journals published in

the United States, these journals being received regularly at this consulate.

JUDSON A. LEWIS.

U. S. CONSULATE,
Sierra Leone, March 15, 1880.

AMERICAN TRADE ON THE WEST COAST OF AFRICA—HOW TO INCREASE THE SAME.

REPORT BY CONSUL LEWIS, OF SIERRE LEONE.

What can be done to increase the trade of American products on the west coast of Africa?

In the first place, no foreigner, be he government official or private citizen, can be expected to interest himself in favor of the United States unless it is for his personal benefit to do so. It is only from Americans, and live, energetic men, that anything can be expected, and then only in proportion to circumstances and their surroundings.

Shippers in the United States and traders and merchants abroad are always ready to deal in such goods as find a ready sale at a satisfactory profit; the order, however, must come from the merchant who sells, for it is only he who knows what goods his market requires.

My own personal experience abroad has taught me this one important fact, that "illustrated American export journals," wherein all sorts of merchandise are advertised and illustrated, have wrought a very important work for the benefit of American trade abroad. Many articles have been introduced and found ready sale in Sierra Leone through the direct agency of these said journals, which are sent regularly and gratuitously by the publishers to the United States consuls. The scope of this advertising and illustrating in these journals should be greatly extended by all merchants and those who are interested in export goods. The idea is simply this: If you cannot show and furnish to the merchant abroad a *sample* of the *article itself*, the next best thing (and by far the cheaper) is to furnish a picture with description, thereby enabling, in very many instances, the foreign merchant to form an accurate idea of the said article, in which case he will order and pay for, at least, a sample of the goods until they can be tried and thoroughly tested. In this way thousands upon thousands of dollars worth of American goods are finding new markets yearly, as they have only to be known to be appreciated.

Again, shall the government or the merchants work up this additional trade? Probably both should assist in this very important work—the government so far as it can do so consistently with the public welfare, on the idea of the greatest good to the greatest number.

Now, how much does the government expect, and how much claim has it upon its consuls for this purpose? If the government pays the consul for his entire time it is entitled to his entire services, and for such proportion of services as he receives proportion of pay. If an American leaves his own country and all its associations, and goes to a far-off and unhealthy place, where there are few comforts and no luxuries, and engages in business for a livelihood, and accepts the position of consul and maintains the honor and dignity of the flag as a United States representative, with all the responsibilities and routine labors of the office, and only receives a few dollars in fees, it is hardly expected that he has the time or inclination to exert himself on an outside matter for the benefit of others.

The work which is being accomplished by Commodore Shufeldt and his officers is no doubt a very important one, and will repay the government many fold, and I would recommend that an American man-of-war should be allowed to visit the west coast of Africa from time to time in the interest not of war, but of commerce, with special instructions to study up the needs of the various markets and report accordingly, and to these American men-of-war thus cruising along the coast the United States consuls could be of very great service. In this way the consumer abroad and the manufacturer at home could be made acquainted with each other's wants, and the government benefited in many ways.

Another method of opening up new trade would be to establish a *commercial depot* at some point on the coast, where samples of goods should be kept for inspection.

This could be done by the government and merchants together, the government furnishing the man in charge, who could be a government official, and who might give bonds for the faithful and honest performance of his duty, in which case merchants would no doubt furnish samples of their goods free, depending on future orders for their remuneration. It would, in other words, be opening an exposition where all merchants and travelers as they pass up and down the coast inspect free of charge the goods and give their orders; it would be an American market to which all merchants, North and South, at very little expense, could come for their supplies instead of visiting New York, Boston, Philadelphia, Baltimore, and Chicago for their goods; they would find nearly as favorable a chance to select goods near at home, and the government could *assist* in an enterprise of this kind, and the merchants combined would do the balance.

Again, as I have already said in a former dispatch, merchants who desire to extend their trade abroad ought to evince a little more liberality than heretofore in *discounts* on *sample goods*, and I have no doubt they would, if the subject were properly brought to their notice, and they could be assured that their goods were placed in the hands of honest men, and especially authorized officials of the United States Government.

Transportation is a very important matter to be considered in this connection, without which the finest schemes and plans are comparatively worthless. When samples of goods have been shown and are accepted and orders given for them, then transportation must be at command to place the articles in the market. At present the only direct communication is by sailing-vessels from New York and Boston. It would seem that the time is not far distant when a line of American steamers sailing from New York to Madeira, Canary Islands, the Gambia, Sierra Leone, Liberia, and so on down the west coast, will present a field sufficiently inviting for capitalists to safely and profitably engage in.

This is possibly an enterprise in which the government could render valuable assistance.

JUDSON A. LEWIS, *Consul*.

Dated at BROOKLYN, N. Y., June 1, 1880.

COMMERCE OF THE WEST COAST OF AFRICA.

REPORT BY CONSUL-GENERAL SMYTH, OF MONROVIA, LIBERIA.

I have the honor to call attention to some facts with respect to the following-named ports, on the west coast of Africa, with which the Department may not be familiar, viz, Accra, Whydah, Lagos, Bonny, and Gaboon.

We are at present without any consular representation at these ports, the last place having been made vacant by the death of Rev. Mr. Bushnell, consul.

Most of our vessels that come to West Africa touch at these ports.

The European world is taking advantage of every opening on the coast where opportunity is given, and using its best efforts to reach and control the interior trade; and the United States, with an increasing population, are doing nothing. It may not be unwise, with reference to future contingencies, for the government to be advised that Africa is a mart for our industries too important to be left unregarded, or to be indifferently allowed to be occupied by others without concern on the part of the United States.

I have learned, though not officially, that the consular appointee at Elmina (Accra coast) is to be transferred to the East Indies.

Whydah is the principal seaport of the King of Dahomey, a powerful heathen monarch, but a man said to be deeply interested in the commerce of his country, as I have learned from an educated and wealthy Dahomian merchant, resident at Quitta, though largely engaged in trade at Whydah.

The commerce of this country is oil, palmnuts, canewood, and ivory.

Lagos is the richest port on the west coast, producing to the British Government a revenue nearly double that of Sierra Leone colony. In 1876, English produce imported at Lagos was valued at £459,737, African produce exported £517,536, a total of £977,273 = \$4,590,000.*

Lagos may be properly termed the gateway to Abeokuta, the most important place in the Youraba country, the land of the great Aku and Egbo or Eba nations.

These people have resisted successfully the encroachments of the King of Dahomey, have a rich country, and in thrift the Aku is the Israelite of Africa, and is rapidly displaying Christian civilization through the zealous labors of their learned countryman, Bishop Crowther, and his efficient corps of educated ministers and teachers; and have recently declared themselves a nation and adopted an ensign.

Sierra Leone was settled largely by recaptured Akus and Eboes, and the sons of these Sierra Leonians who have been educated at Freetown and in England have gone in large numbers to the land of their parents, and have thus contributed to the advancement of this portion of Africa. We are without a representative at Lagos.

Bonny, a country governed by a Christian king, George Pepple, whose father abolished the slave trade in his kingdom, is the most important oil port on the coast.

From personal acquaintance with His Majesty, I can, with confidence, assure the Department, from various conversations had with him while in London, that an American consular office and American commerce in his country would be mutually profitable.

I would respectfully suggest that some supervision be had over these ports in the interests of Americans.

Having recently received a letter from Messrs. Upton and Stephens

*The following statistics concerning Lagos are taken from British official publications, and cover the year 1878: Population, 60,221; area, 73 square miles; public revenue, \$250,000; public expenditure, \$249,500; tonnage entered and cleared (coasting tonnage not included), 362,722 tons, of which the British flag covered 306,329 tons; imports of merchandise, \$2,205,000; exports, \$2,806,000. The principal imports were as follows: Cotton goods, \$770,000; rum, \$300,000; geneva, \$130,000; tobacco, \$160,000; guns, gunpowder, hardware, shooks, cowries, &c. Principal exports palm oil and palm kernels.—*Note by the Department of State.*

with regard to a lease of lands from the King of Danoe in the Bight of Benin, a copy of which I inclose, I was induced to write the foregoing.

JOHN H. SMYTH,
Consul-General.

CONSULATE-GENERAL OF THE UNITED STATES,
Monrovia, Liberia, December 15, 1879.

Messrs. Upton & Stephens to Consul-General Smyth.

ADDAH, November 18, 1879.

DEAR SIR: Some six weeks ago we, Upton & Stephens, leased a land in the Bight of Benin, called Danoe, as a trading port for ourselves and any other Americans or foreigners, outside of the British jurisdiction, from the King and his chiefs. We wish to know if the lease will have to be registered in your office. By informing us you will of course do us a great favor, and any costs will be paid by us.

Hoping you are well, we remain yours,

UPTON & STEPHENS.

(Direct, Accra, care of Alex'r Bruce.)
MR. SMYTH.

BRITISH TRADE IN NORTHWEST AFRICA.

REPORT BY CONSUL MATHEWS, OF TANGIER, MORROCCO.

I have the honor to inform you that an English company, under the leadership of a British merchant named McKenzie, has opened a traffic on a large scale with the wild and independent Kabyles, near Cape Juby, in the same latitude as and opposite the Canary Islands, on the southern frontier of Morocco; Cape Juby stands on latitude 28°, longitude 15° 5'.

Victoria Port is the name given by the undaunted McKenzie & Co. to the small bay or cove twelve miles northwest of Cape Juby, and where a considerable trade with the natives is going on. Besides the steamers of the McKenzie company, there are other steamers which land their cargoes at Lanzarote (Canaries), and from this island are carried on the coast sailing vessels to Victoria Port, where the British are rapidly building large stores and dwellings, for which they have contracted over three hundred mechanics and laborers from the Canaries.

The enterprise, it appears, will be a success, and highly satisfactory to Shej Berinch, the native chief. The trade is daily increasing. There are other English firms as well as French, from Marseilles, who have opened negotiations with the chief of the independent Kabyles of "Aitb'amran," and it is expected that in the early part of this month the first steamer of one of these companies will reach the coast.

The Sultan is uneasy with regard to this clandestine trade, and it is said will endeavor to employ means to prevent it, by opening the port of Agadie or Santa Cruz, to the north of Cape Juby. It is further rumored that the Sultan has ordered Governor M'tuga to send one hundred thousand dollars to Shej Sid Elhozian, of Ilerz (a chief of great prestige and sanctity among his people), to arm his Kabyles and declare war against those of Aitb'amran, with the view of preventing trade with the Europeans.

These wild tribes exchange with foreign merchants their produce, wool, hides, ivory, ostrich feathers, and a variety of gums and tints, also gold dust.

I shall endeavor to obtain all particulars relative to their new opening of commercial intercourse in Northwest Africa, and advise your Department.

FELIX A. MATHEWS, *Consul.*

CONSULATE OF THE UNITED STATES,
Tangier, July 1, 1880.

FRENCH STEAM COMMUNICATION WITH AFRICA.

REPORT BY CONSUL FISH, OF TUNIS.

I have the honor to inform the Department that a French Company, known as the "Compagnie Générale Transatlantique," has established a line of steamers to run weekly between Marseilles and Tunis, and also, in connection with the same, a line to run between Tunis and Tripoli, touching at all the ports on the coast, including the island of D'jerba; and still another line, in the same connection, running from Tunis to Malta, and there connecting with French lines to Italian and other Mediterranean ports. All the vessels of this company are large, commodious, and well adapted for safe and convenient transportation of passengers and freight. One of these vessels leaves Marseilles every Friday evening, touching at Boné and La Calle, in Algeria, reaching Tunis early on Monday evening. Returning, leaves Tunis, Tuesday evening and, stopping at the same places, reaches Marseilles early on Friday morning. The company receives a liberal subsidy from the French Government, and as a consideration, may, at any time, be called upon to do certain work for the government.

The establishment of these important lines of communication so soon after the opening of the Tunisian branch of the Algerian Railway brings the principal towns on the coast of Tunis, as well as those in the interior of the regency, in direct connection with the French possessions in Algeria, and with France, and may be regarded as another step in the direction of the extension of French influence in North Africa and the final control of Tunisian trade and politics by the French Government.

GEO. W. FISH, *Consul.*

UNITED STATES CONSULATE,
Tunis, July 27, 1880.

SALE OF AN ENGLISH RAILWAY IN TUNIS TO AN ITALIAN COMPANY, AND ITS COMMERCIAL SIGNIFICANCE.

REPORT BY CONSUL FISH.

I have the honor to inform the Department that an Italian company, known as the "Società Rubattino," has purchased from the English proprietors, after a sharp and protracted competition with a French company, the railway that connects the city of Tunis with its seaport town, Goulette; the price paid by the Rubattino company being 4,125,000 francs, and the Italian Government guaranteeing 4½ per cent. annual interest on that amount. As further account of this railway and the competition of the French and Italian companies to obtain possession of it,

as well as some other matters of recent occurrence in the regency, of considerable political and commercial significance, may be of interest, I submit the following remarks:

The Lake of Tunis is an estuary of the gulf of the same name. It is about twenty miles in circumference, and from five to seven miles across its surface from east to west and from north to south. It is very shallow, having a depth of less than one fathom in its deepest part.

The city of Tunis stands at the western extremity of the lake, distant from the sea about six or seven miles, in a straight line, and in plain sight of the anchorage in the gulf. The little town of Goulette, which is the seaport of Tunis, is located on the shore of the Mediterranean Sea, at the southwestern extremity of the Gulf of Tunis, and at the point where the shallow lake is connected with the gulf by a narrow passage or throat. The name Goulette signifies gullet, throat, or narrow passage. It is a town of considerable importance. The Bey has a palace here, where he spends a portion of the summer with the members of his household and court. There is a custom-house and a fort with a small garrison.

The railroad.—In A. D. 1871, a British subject by the name of Pickering, who seems to have been an adventurer without either money or reputation, through the influence of some kindred spirits here, and, as it is said, aided by the British consul-general, obtained from the Bey a very liberal concession for the building of a railroad around the north-west shore of the lake to connect the seaport, Goulette, with the city of Tunis, with branches to the Marsa-Bardo and the Marino. This grant or concession was eventually sold by Mr. Pickering to parties in London, and a company was organized called the Tunisian Railway Company, Limited, with a nominal capital of £225,000 sterling, only a small part of which was paid in cash. The length of the road and branches is not far from twenty miles. The cost of its construction and equipment cannot now be ascertained, as the whole management seems to have been speculative and secret. It was, however, built and equipped, and has been in operation several years; and we might here say that it has not proved to be a source of income to the stockholders.

In the mean time the French company have constructed the Tunisian branch of their Algerian railway system from the frontiers of Algiers to the city of Tunis, and it became necessary for the company to secure a seaport terminus. Negotiations were set on foot for the purchase of the Tunisian Railway, and a contract was entered into. But just here a competition appeared. The Rubattino-Italian Company offered a little more than the Frenchmen had agreed to pay, and the company, on some technical pretext, repudiated the contract already made and inaugurated a kind of auction, inviting bids from the competing companies. The result of this competition was that the French offered 4,000,000 francs, and the Italians 4,125,000 francs; for which sum the road has been transferred to the Italian-Rubattino Company in due form, and the company is now operating the road.

Finding themselves thus shut out from a seaport, the French company, supported by M. Roustan, the French consul-general, asked the Bey for a concession that would enable them to extend their road around the southwest shore of the lake to Rhodes, a little Arab village near the seashore, on the opposite side of the lake from Goulette.

At this point the Italian company, supported by M. Macchio, the Italian consul-general, entered a protest, declaring that such a grant would infringe upon the rights guaranteed by their concession. While the Bey was hesitating a French naval squadron of three large vessels,

with an admiral, 1,300 men, and 50 guns, steamed into the gulf and anchored before Goulette. This may have been a coincidence, but it was singularly well-timed for an accident. The French consul-general now requested a definite answer from the Bey, and appointed an hour when he would call for the decision. At the appointed time he waited on the Bey and received the reply, which was, that the request of the French could not be granted, for the reason that the contemplated road would be a competing line, and the Tunisian Government was pledged by the terms of the original concession to Mr. Pickering to grant no concessions to competing lines, and that it would be unjust to the Italian company, under the circumstances, to violate the terms of the old grant. "Then," said the French consul, "I am to inform my government that your highness refuses us the grant we ask." "I cannot do otherwise," replied his highness, "without violating good faith with my Italian neighbors. But," said he, "I will make you almost any other concession you may ask for"; and it was then and there arranged, and has since been confirmed by the two governments, the French and Tunisian, that the Bey concedes to the French railway company the right to extend its road from Tunis to the Gulf of Gabes, with branches to Susa, Sfax, Monastir, and Bizerta, on the Mediterranean, and to Cairwan, and one or two other towns in the interior. The company is also granted the privilege of making a harbor in the Lake of Tunis, and of dredging and maintaining a navigable channel between the harbor and the sea. A French banking company recently established here has purchased the immense estates formerly claimed by General Kheredine and M. de Sancy. The title of this vast property was unsettled, the Tunisian Government never having conceded it to the claimants. Both these estates have been conceded to the French purchasers, and the title thereto perfected and confirmed by the Bey. And in addition to all this, certain claims of French citizens to undeveloped mining property have been confirmed and settled in favor of the claimants. It is estimated by competent judges that these concessions and grants cover nearly one-fourth of the available agricultural surface of the regency, and place the finances and territory of that large and valuable section in the hands of Frenchmen, and the grants covering the mines and mineral regions are not less important and valuable. The Italian consul-general has protested earnestly and vigorously against the proceedings, but without changing the result.

The foregoing brief statement of events that have transpired in this regency within the last six months seems to me to be of sufficient importance to warrant me in reporting the same to my government. It will be seen that France is steadily advancing towards the supreme control of Tunisian affairs, and that, in spite of the opposition of Italy, she is even now dictating to the Bey what he may and what he may not do. It is announced that the extension of the railway from Tunis to Gabes will be commenced immediately and vigorously prosecuted, and that one or two branches will soon be built. It is also authoritatively stated that work will be at once commenced on the new harbor in the Lake of Tunis. I inclose herewith a sketch of the Lake of Tunis and its surroundings, which shows the location and connections of the Tunisian Railway.

GEO. W. FISH, *Consul*.

UNITED STATES CONSULATE, *Tunis*. August 30, 1880.

AMERICAN TRADE IN LIBERIA AND THE SOUDAN.

REPORT BY THE CONSUL-GENERAL OF THE UNITED STATES AT MONROVIA, ON THE EXTENSION OF AMERICAN TRADE IN LIBERIA AND THE SOUDAN.

I had the honor to acknowledge the receipt of your dispatch No. 43 (February 2, 1880) in my No. 73, diplomatic series.

In this dispatch, after necessary delay, I report to you as full information in way of a report as I have been able to gather from various sources.

The sentiments contained in your No. 43, coming from the United States Government, cannot but be regarded as making a new and important era in the history of West and Central Africa.

The Department lays the proper stress upon the position of Liberia in relation to the extension of American commerce in this country; and the present attitude of the government is especially important in view of the vigorous efforts of the French, of which I have advised you, in the countries northeast of Liberia.

The leading minds of Liberia look upon these efforts of the French as a future peril to the republic of the gravest character, and view with gratitude and hopefulness the posture with regard to their country and its future which the United States Government has now assumed.

Liberia unaided can do but little towards the development of the interior trade, or to ward off effectually the encroachments of foreign powers.

But it is of the utmost importance that this community of American Africans, feeble as they are, has established a regular government, with all the machinery and appliances of government, and in principle and functions a miniature of our own, with our adaptability for expansion and growth, and with the rude and elastic health peculiar to young countries.

If in the experience of a judicious and timely discretion the Government of the United States should come to the assistance of this little republic by aiding her in opening roads and improving her lines of communication with the interior, it would be a comparatively easy matter for the United States to draw most of the trade from the Soudan. Barth, twenty-five years ago, saw American cotton goods in countries near the headwaters of the Niger. American productions are the principal articles demanded by the trade of the Nigritian countries.

The leading merchants of Sierra Leone are obliged to keep constantly on hand a large supply of American goods.

But Liberia is the natural and most effective inlet for American articles of trade, possessing a more extensive coast line than any British colony and a larger area of untouched and virgin interior country. And in connection with this, too much stress cannot be laid upon the fact that the new emigrants arriving here from the United States are pushing their agricultural settlements toward the interior and gaining the salubrious and fertile highlands.

These are some of the same people who are now wandering homeless and houseless from one portion of the United States to the other, finding nowhere any permanent relief for their peculiar grievances.

On their arrival here each family receives from the government twenty-five acres of the finest lands, and each single individual ten acres. They become at once proprietors and directors of aboriginal labor, and

are not only able to take care of themselves but to attain, in many cases, competence and to add to the productive capacity of the country.

There are cases of individuals who, a few years ago, were in poverty and distress in the United States, but who, by crossing the ocean, have built up their fortunes to the extent of having coffee farms, in places where they found primeval forests, yielding several thousand pounds of coffee a year, and with an easy and constant increase of their production.

It would be of incalculable advantage if, by some aid from the United States Government, the advance of the people to the interior could be facilitated. For these advances to the heart of negroland, considering the nature of the work to be done, I must add, the pure negro element is the only available agency. The mixed element sicken and die or become disheartened if not housed as exotics are.

TRADE ROUTES.

Lines of communication to the interior are chiefly from the St. Paul's River. From the south bank the trade comes from the Barline and Pesseh countries, and may be drawn from all that region immediately north and west of Ashante and Dahomey.

From the north bank communication is had with Musardu, Kaukan, Segg, and Sakota, and Kano, &c. The other rivers in Liberia are the Junk, St. John's, Sinou, and Cavalla.

PRODUCTIONS OF LIBERIA.

The productions of Liberia and her interior countries are palm-oil, palm-kernels, ivory, cam-wood, rubber, hides, gum copal, coffee, sugar, ginger, arrow-root, cocoa, and gold. Gold is confidently believed to exist, on account of specimens found, but not as the result of any system or kind of mining, either of the Americans, Liberians, or the natives, as far as information exists as to this matter.

Although the arrowroot of Liberia and West Africa generally does not command as good prices in the English and European markets as the West India root, analysis has shown it to be as good intrinsically.

IMPORTS FROM THE UNITED STATES.

American articles in demand are tobacco, cotton goods, salt provisions, and improved implements of husbandry, guns and powder.

THE NATIVES OF THE INTERIOR.

The natives immediately interior of Liberia and extending to the heart of the continent may be considered as semi-civilized. They engage in agriculture, by which they produce cotton, rice, ground-nuts, bené seed, Indian corn, Guinea corn, various esculent roots, &c. They manufacture cotton goods, leather, and earthenware, gold trinkets, iron implements. They live in regular towns, under municipal regulations, and have schools, both in Mohammedan towns, where Arabic is taught, and among the Vays, where their own language is taught, written in syllabic characters of their own invention.

DESIRE FOR CLOSER COMMERCIAL RELATIONS WITH THE UNITED STATES.

The American Liberians, occupying more than five hundred miles of coast, are in civilization American.

They look upon the United States as a sort of fatherland, and gather their political, religious, and educational impulse from the American Republic, preferring the institutions of that country to those of any other, and far more content to trade with it than with any other.

The foregoing true portraiture of the Liberian's likeness to that of our own negro fellow-citizens, and their institutions, religious, educational, and political, to ours, after sixty years' existence as colony and republic in Africa, though gratifying to our pride as Americans, and of advantage to the United States in their contemplated commercial relations with Liberia, is not a hopeful commentary upon Liberia in its hoped-for influence upon Africa, nor, indeed, is it so much a matter of gratulation in a commercial view, since all West Africa and the Soudan, so far as the native negro is concerned, are favorable to America as to trade, in view of the excellence and cheapness of the productions of our country, which they are beginning to use so largely.

FOREIGN BUSINESS HOUSES.

The foreign business houses are Dutch, German, and English, but they do little business compared with what might be done, and for the interior trade they are obliged to deal largely in American products.

AMERICAN TRADE ADVANTAGES.

American houses here would in a short time monopolize the trade. Competition of European houses against them would do very little, inasmuch as European traders must get their principal articles of trade from America through European markets.

It is impossible to give even an approximate estimate of the extent of the trade which would be commanded by American houses; but I may state in general terms, that they would have through Liberia, on account of the peculiar connection of the republic with the United States, the almost exclusive control of the trade in a region of country extending along five hundred miles of coast, with an indefinite back country inhabited by millions of people.

The Soudan has been reckoned to contain more than one hundred million people.

The above statement is to be regarded in the light of a liberal construction of the port of entry laws as existent, which under several administrations have been construed in favor of foreigners trading in all civilized settlements of the republic, whether ports of entry or other.

The law-makers of the republic should be persuaded that under certain restrictions they may with safety and advantage accord larger privileges to foreigners, admitting them not only to more numerous points of the coast, but to the various rivers, where they may be permitted to lease lands for a term of years for carrying on their operations with some degree of responsibility to the local chiefs, conforming at the same time to the revenue laws of the republic, and being solely responsible for any disorder arising from their own conduct.

STEAM COMMUNICATION BETWEEN THE UNITED STATES AND LIBERIA.

The question of steam communication between the United States and Liberia is one of the greatest possible importance to the two countries.

If such communication were established it would revolutionize the entire trade of the west coast, now mainly in the hands of Englishmen, through the three lines of steamers plying between the coast and Liverpool and London, and would eventually throw most of the trade from the Soudan into the United States.

But there is another aspect of the subject of peculiar importance both to the United States and to Liberia, viz, the impulse which such a line of steamers would give to the emigration of negroes from the United States to Liberia and other parts of West Africa.

There is no doubt, as you have been pleased to remark, that Liberia is the predestined home of many who enjoy citizenship in the United States, and this going out to a greater or less extent of our citizens of African descent is but a question of time.

The peculiar work of races, in the order of Providence, is to receive its guiding impulse in their ancestral home, in their habitat, whatever may be the further developments, after they have fixed the character of their work in their original home.

A steamer from some Northern port and one from a Southern port, every three months, or at shorter intervals, would soon throw thousands of industrious negroes, who now have neither room nor stimulus in the United States, into the region of country east of Liberia, where, in a very few years, their influence would accomplish more for the United States and for Africa than they could possibly effect during the next two or three generations if they continue in the United States; and this would seem the solution by which the problem of Africa in America must be sooner or later ultimately effected—a solution much more satisfactory, it appears to me, than any at present proposed by politicians in the United States.

Nothing is now heard of the English railway scheme from Monrovia to the interior, for which a concession was granted by the Liberian Government eighteen months ago. It seems to have fallen through for want of funds.

RESOURCES OF LIBERIA.

The opinion of the late President Roye as to the resources of Liberia may be of interest to you in connection with what has already been said of Liberian resources and the interior. The following is copied from the Liberia Register, Monrovia, Wednesday, October 5, 1868:

In reply to your query as to the resources of Liberia, President Roye declared that the only obstacle to the development of the wealth of the country was the lack of communication with the interior. Liberia was almost, said he, entirely destitute of large navigable rivers or canals; and where indigenous and spontaneous wealth covers the ground, the advantages of the railroad must be apparent. 'The construction of a railroad would do more to break down the barrier of superstition and heathenism than any other means that could be used, and would be the surest way to evangelize and christianize Africa. The railroad to be built will probably be from 80 to 100 miles long, in an easterly direction from Monrovia into the cam-wood and palm-wood districts, and the wood necessary for its construction can be obtained on the spot, while the natives are willing to do all the manual labor for small pay, kind usage, and enough to eat, and upon the completion of the road would become the best customers to bring the cam-wood, palm-oil, ivory, Mandingo gold, cotton, country cloths, peanuts, iron ore, hides, bullocks, sheep, goats, rice, and other things, which are at present carried to market on the backs of natives.

In addition to the foregoing, I forward you a copy of a letter, marked inclosure No. 1, containing some answers to your questions by a Liberian. The writer, Hon. J. B. More, an associate justice of the supreme court of Liberia, and a merchant, and the son of Mr. Gabriel More, the oldest

and most respected and most successful merchant in the republic, is worthy of note.

AMERICAN TRADE OF THE WEST COAST.

As to the trade of the west coast, I have the honor to inform you that from San Pedro to the Gaboon River, American vessels may be seen at all seasons of the year, some remaining on the coast from one year to one year and a half.

The principal commodities brought by them to the coast are tobacco, rum, rice, and provisions, and pine lumber, all of which are sold at a good profit; palm oil, palm kernels, ivory, and money, are received in exchange by these traders.

Rum and tobacco are articles of trade here, which are controlled exclusively by Americans.

From correspondence by letter and personal interviews with resident merchants and traders, I have learned that the native traders are anxious for an increase of trade with America, in view of the advantages in prices, fair credit system and equality of commodities.

There are at least fifty ports between Cape Palmas and the Old Calabar, where the English steamers stop, the majority of which are free ports. The most important of these are English and French ports.

This trade which is being carried on, and of which we possess very little reliable data, is almost wholly under the protection of foreigners, there being but few American consulates on the west coast.

I am decidedly of opinion that a line of steamers to the west coast would be of great benefit to our commerce, and in a short time secure for our manufacturing and agricultural interests a permanent source of wealth, and contribute largely towards the civilization of Africa.

JOHN H. SMYTH,
Consul-General.

LEGATION OF THE UNITED STATES,
Monrovia, Liberia, May 2, 1880.

[Inclosure in foregoing.]

Hon. J. E. More to Minister Smyth.

I have the honor of your communication of March 11, and must crave your pardon for the tardiness of the acknowledgment, caused by an excessive pressure of engagements ever since the receipt thereof.

To your first query—the business methods of the Liberians—I would say that these are a mixture of the barter and money systems. With the aborigines it is chiefly, nay, almost wholly, an exchange of goods of foreign importation for the produce of the country; but among the civilized portions of the communities the business is not exclusively a bartering one, as goods are either sold for money, coins, drafts, currency, and money given for produce, or one class of commodity is exchanged for another. As in other countries, the business is done either for cash or ready payments, or on credit for such time as may be agreed upon by the parties, sometimes monthly, quarterly, and with farmers often yearly.

Your intercourse with the people of this country must have long since suggested to you an answer to your second query—the temper of the people and government of Liberia towards the United States—that this is of the most friendly character.

The inclination toward foreigners in commercial and other intercourse and relations is decidedly in favor of Americans.

I am not sure that I fully comprehend the idea contained in your third question—the character of the competition which American merchants might expect to encounter—but will reply, the usual competition of trade as to prices, quality of goods, &c. He must be prepared to compete with the European in cotton fabrics, powder, salt,

guns, cutlery, &c., selling these at as low prices and paying as high prices for the produce of the country.

I hope that the answers thus briefly given will somewhat contribute to the information sought.

J. E. MORE.

MONROVIA, April 30, 1880.

CRUISE OF THE UNITED STATES STEAMER QUINNEBAUG TO THE WESTERN PORTS OF MOROCCO.

REPORT BY CONSUL MATHEWS, OF TANGIER.

Having received an invitation from Rear Admiral Howell to a passage on board the United States steamer Quinnebaug, to the western ports of Morocco under my consular jurisdiction, I accepted the kind offer for the good of the service, and now have the honor of submitting for your information a report of the eleven days' cruise, which sufficed to visit the six western ports, and my return to Tangier yesterday morning.

The United States corvette Quinnebaug, Commander U. H. Farquhar, arrived at Tangier on the 24th ultimo, and, after exchanging salutes with the Moorish batteries, Commander Farquhar, with his aide-de-camp, landed, and was introduced by me to the Sultan's minister of foreign affairs and local authorities, by whom he was most cordially received; also to all the members of the diplomatic body accredited to the court of Morocco; the compliment was duly returned by these gentlemen on the following day at the consulate.

On the 26th, I gave for the benefit of the officers a wild boar hunt with upward of a hundred Moorish brators, in the woods near Cape Spartel, and five boars were killed, sufficient game to satisfy the whole ship's company.

We left Tangier on the afternoon of April 28, and steamed along the rock-bound lofty coast to Cape Spartel (seven miles from Tangier), the western extremity of the northern shores of Africa. After turning the right angle of land of which Spartel with its light forms the apex, our way lay well clear of the coast in a southwesterly direction to Rabat, our first stopping place. The run of 120 miles from Tangier to Rabat occupied fourteen hours.

RABAT AND SALEE.—On the morning of the 29th we anchored off Rabat and Salee. The roadstead is quite unprotected, and a heavy sea was rolling in from the Atlantic. It was not long before a large boat put off to us, having on board the captain of the port, the health officer, and the vice-consul of Austria, Portugal, and Brazil, who is also our acting consular agent. At 7 o'clock a. m. the ship saluted the town, which was returned with eleven guns from the batteries of Rabat and ten from those of Salee. The commander, several officers, and myself left for the shore at nine o'clock in the Moorish boat, rowed by sixteen Moors, with short, clumsy oars. Watching the opportunity outside the seething waters of the bar, the men impelled the boat with their utmost strength on the crest of the ingoing waves of the tremendous surf. The wild excitement of the scene beggars description. With wild shouts and frantic gestures the reis, or captain, at the helm, urged the crew to renewed exertions, and they strained every nerve, yelling like madmen in response. We were all safely landed through the foam, and we were received by the governor, local authorities, and by lines of troops as a guard of honor. The foreign vice-consuls and delegations of the Israelites paid their respects to us at our acting agent's residence. I returned

the visits, accompanied by Commander Farquhar and some of our officers. Our interview with the governor, at his palace, lasted one hour, and at 5 o'clock p. m., accompanied by the Moorish authorities, consular body, and an immense crowd of people, we returned on board, leaving Rabat and its good people regretting our short stay.

Rabat is a modern city of considerable extent, densely populated, strong and well built. It is situated on the declivity of a hill, opposite to Salee (the old nest of the Salee rovers), on the left side of the river Bowragrag. The walls of Rabat inclose a large space of ground, and the town is defended on the seaside by three forts. The population is calculated at about twenty-six thousand souls, chiefly Mohammedans.

Among the population are four thousand Jews, some of them of wealth and consequence. The merchants are active and intelligent, carrying on commerce with Fez and the interior, as also with the foreign ports of London, Gibraltar, and Marseilles, through British and French monthly steamers. In the middle ages the Genoese had a great trade with Rabat. Many beautiful gardens and plantations adorn the suburbs. The Moors of Rabat are mostly descendants of those expelled from Spain. Rabat was built by the famous Sultan Almanzor, who intended it should be his capital. His untenanted mausoleum is placed here in a separate and sacred quarter. This prince, surnamed the "Victorious" (Almanzor), was he who expelled the Morarvedi from Spain. He was the Nero of Western Africa.

At a short distance from Rabat are the ruins of Shella, the site of the metropolis of the Carthaginian colonies, which contain the tombs of the royal family of the Benimerini; no infidel being permitted to enter therein excepting officials accompanied by local officers.

Salée, a name which this place bore antecedently to the Roman occupation, is a very ancient city, and was captured in 1263 by Alphonso the Wise, King of Castile, who was a short time after dispossessed of his conquest by the King of Fez, and the Moors have kept it to the present time, though it has often attempted to throw off the imperial yoke.

The modern Salée is a large commercial, and twenty years since it would have been called a well-fortified, city. The population, all of whom are Mohammedans, are now, as in corsair times, the bitterest and most determined enemies of Christians, and will not permit Christians or Jews to reside among them. The amount of this population is about fourteen thousand.

CASABLANCA.—At sunset we left Rabat roadsteads and at seven o'clock on the following day (the 30th) we dropped our anchor off Casablanca, exchanged salutes with the town batteries, saluted our consular agent, Capt. John Cobb, on visiting the ship, and at ten o'clock landed.

We were received by the governor and his staff, local authorities, and lines of troops, also with a salute from the batteries. We repaired to the consular agency, receiving the visits of the authorities, consular body, and Hebrew delegations, with flags and music. On the following day, accompanied by Commander Farquhar, I returned all the official visits.

Casablanca, or Dar el Baida, "White House," was built on the ruins of Anfa, a town said to have been founded by the Romans. Anfa was destroyed by the Portuguese in 1468, but they abandoned the place in 1515, soon after they had rebuilt and renamed the town. The plain on which it is placed is of great extent and very fertile. We must acknowledge disappointment on landing. Viewed from the sea its compact looking walls, batteries, and couple of minarets give it a respectable appearance, but inside the walls it is the dirtiest, most tumble-down

place ever seen. The consulates are substantial buildings, the United States consular agency being the largest and highest and the most prominent seen from the sea.

Here Captain Cobb has his mills, engines, and stores, with American manufactured farming implements, pumps, and notions. The other houses are in bad repair. There are also many waste spaces; of these not a few are covered with reed huts, in which many Arabs, wretchedly poor, were encamped. The streets and open spaces are covered with fetid pools of stagnant water and abominable filth.

It is a wonder how people can exist in such a place. The population now is about five thousand, all that is left of the havoc made by the famine, cholera, and typhus fevers of the years 1878-1879, when the daily mortality reached upwards of one hundred per day. The worst climate on the African coast could hardly show a higher rate of mortality.

The cholera epidemic of 1868 lasted six weeks, during which 583 persons fell victims to the disease.

The walls around the town are twenty feet high and made of "tabia." They are supported at short intervals by square buttresses, and at longer intervals were small, square, castle-like towers. The country all round was flat and marshy, but there were good fig orchards, fine palm trees, and the castor-oil shrub and aloe plant grow luxuriantly.

Just outside the gate on the land side was the slaughtering ground, where the offal of animals festering in the hot sun adds to the pollution of the town. The town is skirted on its southern side by a stream.

The exports of this place, as well as its manufactures, are similar to those of Rabat, and consist of maize and beans, wool, carpets, and slippers. Casablanca exports more wool than any other place on the coast. The bar at the mouth of the river at Rabat causes much of its produce to be shipped at Casablanca.

MAZAGAN.—On the evening of May 1 we bent our course again for the south. The coast for a long distance here is flat. Azamoor, seated on a low hill, was sighted in the morning; and at the opposite side of a wide, open bay lay Mazagan, our next stopping place, and here we anchored. Exchanged salutes with the shore batteries; saluted our consular agent, Mr. Redman, on his visiting the ship; and, after showing round the ship the several Moorish officials who came alongside on the ship's arrival, we landed at ten o'clock under a salute from the land batteries, and were received by the governor, with a large retinue; the troops lined the way from the landing to the consular agent's residence, presenting arms and beating their music.

Delegations of the Jewish community came forth to welcome us with flags and music, offering milk and flowers.

The official visits to the governor and consular body were returned at three o'clock, and at five we returned to the ship. Mazagan, in the province of Duqualla, is 210 sea miles southwest of Tangier, and 50 sea miles from Casablanca. It is situated on a peninsula, and owes its origin to the shipwreck of a Portuguese vessel, bound to the coast of Guinea, in 1502. It is stated that the shipwrecked mariners took refuge in a tower found on the spot. By whom this structure, called the tower of Alboreja, was built it is not clear, though it was probably due to some previous enterprise of the Portuguese.

The shipwrecked mariners were so pleased with the climate and fertility of the soil that, leaving twelve of their number well armed and fortified in the tower, the remainder returned to Lisbon to ask permission of the King, Don Manuel, to erect a fortress.

This having been conceded, they returned with men and materials to carry out their purposes. But they were almost immediately attacked with such fury by the people of Azamoor, as also by the neighboring tribes, that they were glad to take refuge in the tower. They were soon compelled to abandon this position and return to Lisbon.

Again they made their representations to the King in 1509, resolved to construct a square fortress flanked at each angle by a tower. The existing tower of Alboreja was incorporated into the east angle, and as this was of great height it became the watch-tower of the fortress.

The three newly-built towers were called respectively the towers of Segonha, of Cadea, and of Rebato. This last afterwards became the prison for the nobles. Twenty-five cavaliers and one hundred foot-soldiers constituted the garrison of the fortress.

At the suggestion of the Duke of Braganza, who visited Mazagan on his way to the conquest of Azamoor, the King of Portugal again turned attention to the new settlement.

In 1513 he sent one of the best architects in his dominions to add to the strength of the fortress, and to build a town. This was square in shape, and inclosed within walls in which were three gates. The principal gate, that on the land side, was entered by means of two draw-bridges. Another gate, facing the sea, served for communication with the shipping; and there was a third gate in the northeast wall, but this was soon permanently closed.

The wall which inclosed the town measured about 4,500 feet in circumference. This latter contained four churches, eight religious houses, and twenty-five streets, and the population soon numbered 4,000 souls. The fortress, which occupied the center of the town, was provided with great stores of grain, of ammunition, and everything necessary for a siege. It also contained a prison and a hospital; the latter, with walls of great thickness to resist shot, is at present the residence of Mr. Alfred Redman, our consular agent. More than a hundred bronze cannon, with two mortars, served for the defense of the place.

During the whole time of their occupation, a period of 268 years, between 1502 and 1770, the Portuguese never ceased to be exposed to attacks from the Moors. In the year last mentioned the Sultan Muley Mohamed Ben Abdellah sent an army of more than 100,000 men against the place. As the siege continued, the King of Portugal, Don José I, taking into account the frightful sufferings of the garrison and the impossibility of holding the town except by constant bloodshed and a great loss, resolved upon giving it up. The defenders hearing this determination in respect to a spot which they had so long and so dearly held, laid numerous mines, which were fired as soon as the enemy entered. In this way 5,000 Moors are stated to have perished. Mazagan was the last stronghold of the Portuguese in Morocco. On their return to Portugal these valiant warriors were coldly received, and were soon afterwards sent to Brazil, where they founded a colony, to which they gave the name of Villa Nona de Mazagan, in memory of their former dwelling place.

The foregoing details have been left by Don Luiz Maria do Conto de Albuquerque da Cunha, who was one of the garrison at the time the order was received to abandon Mazagan. The present chargé d'affaires of Portugal, Don J. D. Colação, is the grandson of the Portuguese consul-general at Tangier at the time the Portuguese gave up Mazagan, and the archives of the Portuguese legation at Tangier, of which I had charge for nine months, contain much correspondence between the gov-

ernor of Mazagan and Don José D. Coláço, during the middle part of last century.

At the present time Mazagan has many fine specimens of Portuguese architecture. The massive fortifications towards the sea are quite perfect, and in former times were formidable works. A large ruin, which is the most prominent object in the place, is, doubtless on account of the dungeons which it contains, called by Europeans the palace of inquisition; but there is no proof that the building was ever devoted to purposes of this oppressive tribunal.

The remains of the four towers which formed the angles of the fortress are still visible. There are also ruins of a cathedral. But the work which struck me most worthy of note was a magnificent cistern for storing water. Its roof, which is below the soil, was constructed of a series of flat groined arches, supported by forty-two pillars of stone. Light was admitted by a circular aperture in the center of the roof, while an entrance provided with steps led to the water.

The walls of the town are surrounded by a broad but, then, empty moat. They are thirty feet wide and twenty high, forming on the top a fine promenade, from which is obtained a good view of the surrounding flat, uninteresting, but fertile country.

Mazagan has now but one gate, and its population is reduced to 3,000 inhabitants; of these about 850 are Jews. It owes its commercial importance to the great fertility of the surrounding country, the soil of which is admirably adapted for the growth of cereals and beans. There is also a large and increasing trade in wool. The European nations are represented here by consuls and vice-consuls, the United States by a consular-agent.

There is a small port or dock in connection with the fortifications on the north side of the town, but it is only sufficient to admit very small vessels; those of larger size are obliged to anchor about a mile off the shore.

The remnants of wrecks above water near the shore prove the treacherous nature of the roadstead. Mazagan has also a good deal of traffic with Rabat, and beans and maize are exported to England in considerable quantities.

Notwithstanding its filth, its rough-paved streets, which retain all manner of abominations, and the entire absence of sewers, the town is not generally unhealthy. During the cholera epidemic in 1868 the mortality reached twenty-five deaths in a day.

The cholera of 1878, and typhus consequent on the late famine, committed havoc even among the few European residents. The ophthalmia which prevails is attributed to contagion through the flies.

The neighborhood of Mazagan contains plenty of partridges, quails of two kinds, woodcocks, snipe, and plovers; owls, ravens, pigeons, storks, and starlings are flushed in the ruins of the old town. When we arrived we found that rain had fallen there almost every day since the first week in April.

SAFFI.—We left Mazagan on the afternoon of the day of our arrival, May 2, and early in the morning of the 3d we stood in for Saffi, our next port. The surf at this place at the landing makes it very often impossible to land, and fears were entertained of not being able to land from the foaming aspect of the surf seen from the ship; but about seven o'clock in the morning a boat was observed coming out towards the ship, which proved to be the health boat bringing also the captain of the port.

After exchanging salutes with the shore batteries we landed in one of the shore surf boats. We were received with a salute from the shore batteries, and at the landing were met by the governor and local authorities between lines of troops who accompanied us to the house of our consular agent, where the consular body came to pay their respects.

The whole town was out and the stores were closed in honor of our arrival. Deputations of Israelites with flags, music, offering flowers and milk, came to congratulate us.

Accompanied by Commander Farquhar and his aid, we returned the visit of the governor at his palace, where tea and sweetmeats, as in all the ports, were served to us in profusion.

After returning all the visits we embarked, accompanied to the shore by the governor and almost the whole community, at sunset; and shortly after the "Quinnebaug" started towards Mogador. The governor sent on board for the ship's company an ox, sheep, fowls, eggs, bread and vegetables.

Saffi or Asfee, called by the natives properly, and anciently Soffia, is a city of great antiquity, belonging to the province of Abda, and was built by the Carthaginians, near Cape Cantin. Its site lies between two hills, in a valley which is exposed to frequent inundations. The roadstead of Saffi is good during the summer, but in winter is very unsafe for all but steamers.

Its shipping once enabled it to be the center of European commerce on the Atlantic coast. The population amounts, after the famine, cholera, and typhus, to about five thousand, about one thousand of which are Jews.

The walls of Saffi are massive and high. The Portuguese captured this city in 1508, voluntarily abandoning it in 1641.

The country around is much cultivated with cereals. Wool is also shipped in considerable quantities. About 40 miles distant southeast is a large salt lake.

Saffi is one and a half days' journey from Mogador; equidistant between Mazagan and Saffi is the small town of Waladia, built in the sixteenth century by Sultan Waleed.

MOGADOR.—On the morning of the 3d of May, the town of Mogador was discerned rising out of the sand hills by which it is partly surrounded, but owing to the gale of wind which was blowing fresh the vessel stood off until the morning of the 4th, when the Quinnebaug anchored at about half a mile from the landing place. Mogador is about 350 miles southwest of Tangier. It is the model town of the Moors, and from a distance has some claim to the name by which it is called and known to them—Suerah (the beautiful).

There is an island to the southward of the town, and the entrance to the port lies between the northern end of this island and a dangerous reef of rocks. Between this island and the shores we anchored, exposed to a tremendous swell from the Atlantic, which kept the vessel rolling fearfully during all our stay.

After exchanging salutes with the town, accompanied by Commander Farquhar and his aid, we landed from the ship's cutter. We were received at the landing by the governor and city officials with a guard of honor. Preceded by the American flag, carried by a Moorish soldier, and followed by a large cortege, the governor and suite accompanied us to the consular agent's residence, where, during the afternoon, I was visited by all the foreign consuls and vice-consuls.

We visited the governor at his palace, where tea and Moorish cakes

were served out to the visitors, and, as with the other governors, an animated conversation and inquiries about the United States, its extent and products, took place. As the Moors are totally ignorant as regards geography and history, such verbal information is highly appreciated.

Contrary to season in this latitude of Morocco, rain and disagreeable squalls prevailed, with a rolling sea, and glad we were when at three o'clock on the afternoon of the 6th, after a stay of thirty hours, Mogador lay on our starboard quarter, as we steamed out of the restless anchorage east of Mogador Island.

Mogador is in latitude $31^{\circ} 30' N.$, and, notwithstanding this approach to the tropics, has a remarkably temperate climate. Notwithstanding the imperfections of its sanitary provisions, the town is remarkably healthy. This is to be attributed to the ventilating and cooling action of the trade-winds.

Copious rains of short duration prevail from the end of November to the commencement of April, but chiefly in February and March. The south wind sometimes blows with great violence, and occasionally there are thunder storms, as we experienced during our short stay.

It is remarkable that the sirocco (southeast wind), the terrible scourge which is experienced with fatal effects a little inland, very seldom, even in a modified degree, reaches Mogador.

The town is built partly on sandstone rocks and partly on the sandy shore of the Atlantic, in such a way that in certain states of wind and tides the place is surrounded by the sea without being flooded. There are reefs of rocks at the north of the town upon which the waves break with great violence.

The spray is carried by the wind into the town in the form of invisible particles of sea-water. This is regarded as very healthful, but it has great disadvantages. Iron rusts, and leather and other articles become moldy in spite of care. The northeast wind is the great benefactor of the place. Whenever the temperature rises this wind increases in force, after which the thermometer falls. It begins to blow at about 9 a. m. and increases in force until midnight, and from that time the night is calm.

Although in the latitude of the Great Desert, the town is situated far enough to the west to be outside of the dreaded desert wind. Places a little farther north and more to the east are within its burning track. Mogador contains about 15,000 inhabitants, after the terrible ordeal of famine, cholera, and typhus which reigned for two years.

Within this population are 6,000 Jews and 160 Europeans. The town is comparatively new. It was built in 1760 by the Sultan Sidi Mohamed Ben Abdellah ben Ismail, and derives its name from the adjacent sanctuary of Sidi Mogadol, which we see marked on the charts of navigation, but it is better known to the Moors as Suerah.

It is the only town in Morocco which has been laid out with a view to regularity of plan. Like most Moorish towns, it is divided into two parts, the citadel and the outer town. The citadel contains the public buildings and the houses of the foreign merchants. The Ghetto, or Jews' quarter, is in the lower town. It is isolated and inclosed by walls.

The town is supplied with water by an aqueduct, which brings it from a river about a mile and a half distant. In the part of the town occupied by Europeans the streets are of good width for a place in which wheeled vehicles are unknown, and are kept fairly clean. Moreover, the drainage here is effected by sewers.

Mogador is the capital of the fertile province of Haha, but in conse-

quence of its position it has no immediate rural connections. Its inhabitants live by commerce, which at present is at a standstill; its food supplies are brought from a considerable distance; grain is seldom exported from Mogador. The fine olive plantations of the country to the south yield abundance of oil, which forms a large article of commerce. Various gums, almonds, bees-wax, ostrich feathers, wanjara gold, ivory, goat skins, wool, and sundry other articles are also exported. Many of these articles are brought by caravans from Timbuctoo and the Soudan.

There is a steam-mill and number of horse-mills for grinding corn. A good deal of Morocco leather, chiefly of that fine yellow color of which slippers are so universally made, is produced in Mogador. There are also some soap factories.

A dispensary has been for some time established in the Jews' town; Sir Moses Montefiore has been the liberal donor to its funds. The cholera epidemic of 1866 passed lightly over Mogador; two per cent. only of the estimated population fell victims to it, while the mortality at Tangier was four per cent., at Mazagan nine, and at Casablanca fourteen per cent. The cholera of 1873 and the subsequent typhus, together with the famine, took away over one-half of the people living at Mogador.

The island at Mogador is rather more than a mile from the southern extremity of the town. It is nearly half a mile in length, extending along the shore with a breadth at the widest part of about 500 yards. Thus situated, the island might be supposed to form a natural break-water against the impetuous roll of the Atlantic; but in this respect it is of little use. The water intervening between the mainland and the island is shallow and exposed to the headlong rush of the waves which sweep round its northern extremity. Here is the entrance to the port. Vessels provided with steam power only can attempt with any certainty of success entrance to the port. Very few sailing-vessels now resort to it, and these are chiefly Spanish, from the Canary Islands.

The island of Mogador is the only quarantine station in Morocco, and is occasionally used for the purpose. It contains two houses and a mosque. The northern end of the island is the home of innumerable wild pigeons, and the ledges of the rocks at the bottom of the cliff are the resort of great numbers of cormorants and other sea birds. The island is too small to harbor game, but it abounds in cats which have run wild.

In 1844, when the French, under Prince de Joinville, bombarded Tangier and Mogador, they landed here at the island, and met with a most resolute resistance from the garrison of some hundred Moors, who fought with great desperation. On both sides great slaughter ensued, numbers of the Moors perishing in their attempt to swim to the mainland. On the morning of the day of our departure from Mogador the governor sent on board for the ship's company an ox, several sheep, and a lighter full of bread, vegetables, eggs, &c.

Return to Tangier.—On the second day of our leaving Mogador we arrived at Tangier, where the Quinnebaug anchored on the morning of the 8th instant.

Altogether the cruise has been quite an ovation, and no doubt will be productive of much good to the respect and benefit of all Christian settlers on the coast of Morocco, and to the Israelites whom, at every port, I had occasion to recommend to the benevolence of the governors.

The vessel was at every port received by crowds of people, Christians, Moors, and Jews, among them foreign consular officers and Moorish officials, who admired everything appertaining to the ship, and all were

full of praise at the kind reception and treatment accorded to them by the officers on board.

Commander Farquhar, who displayed so much seamanship and wisdom in bringing in and out the vessel under his charge into the dreaded roadsteads and ports of Morocco without the assistance of pilots, with which other foreign vessels are provided previous to their visiting these ports, won the admiration and high esteem of all the governors and officials who met him for his frank, unpretentious, and gentlemanly manners, and for his courteous attention to all; and, for my part, I feel deeply grateful to the gallant commander for his kindness and attentions to me during my brief sojourn on board.

On the 10th the Quinnebaug left Tangier for Gibraltar to coal, previous to her sailing for the British Channel and the Baltic.

FELIX A. MATHEWS,
Consul.

UNITED STATES CONSULATE,
Tangier, May 16, 1880.

COMMERCE OF THE EAST, AND OF NORTH AFRICA, AND THE SHARE OF THE UNITED STATES THEREIN.

REPORT BY MINISTER NOYES, OF PARIS.

I have the honor to report that in compliance with instructions contained in State Department dispatch No. 178, of date August 29, 1879, I left France on the 16th day of October last, and returned on the 27th day of February, 1880. I should have arrived in Paris at least three weeks earlier but for unavoidable delays, occasioned by severe and almost unprecedented storms on the Mediterranean Sea, which interrupted the various steamship lines.

During my absence I visited Genoa, Pisa, Florence, Rome, Naples, and Brindisi, in Italy; the islands of Corfu and Syra, the Piræus and Athens in Greece; Mytelene, Constantinople, Smyrna, Rhodes, and Cyprus; Beyrout and Damascus in Syria; Jaffa and Jerusalem, and the neighboring places of interest and importance in Palestine; Alexandria, Cairo, and the other principal points for seven hundred miles up the Nile, especially Assiout, Luxor, and Philæ, in Egypt; the island of Malta; Tunis, Bona, Constantine, Setif, Algiers, and Oran, in Algeria, making the entire length of the colony by rail and diligence; Gibraltar and Malaga, Seville, Cordova, and Madrid, in Spain, returning to Paris direct by way of Bordeaux.

At all the points visited by me I conferred freely with the diplomatic and consular representatives of the United States, wherever such were to be found, regarding the subject-matter of my special mission, consulted many private persons of business capacity and prominence in commercial affairs, and had many interviews with the responsible local authorities of the several countries. Among the latter may be mentioned the leading members of the Sultan's government at Constantinople, the governors-general at Beyrout, Damascus, and the Lebanon district in Syria, the governor-general of Palestine at Jerusalem, the Khedive of Egypt at Cairo, the Bey of Tunis, the French officials in Algiers, the English governor-general at Malta, and many others of less prominence.

I was everywhere received as the representative of the United States, with the greatest possible kindness and courtesy, and I found nothing

but the friendliest disposition manifested toward our country by native rulers, subordinate officials, and people.

THE ABSENCE OF THE AMERICAN FLAG FROM EASTERN WATERS.

But I experienced a sense of humiliation that the inhabitants of the East have so little to remind them of the existence and resources of the United States. The first time I saw the American flag on the Mediterranean was at Villa Franca, where our naval fleet was lying at anchor, as I started on my journey; again, on one of the same war ships, the *Enterprise*, at Jaffa; for the third time, over the vessel purchased by Captain Gorringe, in which to transport the Egyptian obelisk from Alexandria to New York; and once more, on our war frigate, the *Swatara*, at Gibraltar, on her way to China. In not another single instance, in port or on the sea, did I observe the stars and stripes, except at the mast-head of the steamers on which I sailed. The flags of other nations, the English, French, Spanish, Italian, Austrian, Russian, and many others were everywhere afloat, in the harbors and on the high sea, while the exceptional appearance of our own excited curiosity and comment among the Orientals, because it had been so rarely seen of late.

I was informed by our consul at Smyrna that formerly as many as seventy-five or eighty American vessels had been seen in that port at one time. Last year there were but three, all told.

During the year 1879 two hundred vessels, bound for the United States, with a tonnage of three hundred thousand tons, touched at Gibraltar, of which less than forty, and these of small capacity, were American bottoms. Formerly from one hundred and fifty to two hundred American vessels visited this port every year.

These examples, which are not exceptional, serve to illustrate the falling off of our shipping in these waters. I was led seriously to consider whether or not a different state of things was not possible. Certainly no obstacle exists in the disposition of the people of the East, whether rulers or subjects. Many have an intelligent, and all a vague idea of the vast resources of the United States. I found everywhere in the Sultan's dominions a kindly and sympathetic feeling manifested toward our countrymen, the expression of which was always hearty and unrestrained. In the minds of the Orientals our government is excluded from the list of those which they represent as considering Turkish territory and Turkish property the legitimate prey of the strongest. Our intervention in their affairs has not been to oppress, to tax, and to rob the people, but only to bring to them, in the most unselfish manner, through American missionaries and teachers, that education and those civilizing influences which have made our own country so rich, powerful, prosperous, and happy.

The political questions pertaining to the East have for many years engrossed public attention. Little interest has been taken in the silent but potent influences at work for the amelioration of the moral and elevation of the intellectual and social conditions of the unfortunate millions who inhabit countries bordering on the Mediterranean Sea. This work has been almost exclusively in the hands of Americans, and I have thought that a brief account of it could not fail to be of use to the American people.

COMMERCE IN NORTH AND EAST AFRICA, AND OUR SHARE THEREIN.

Already a large and rapidly increasing trade has been established in the countries bordering on the Mediterranean Sea, by England, France,

Austria, Italy, and, in less degree, by Spain and Russia. America is almost entirely unrepresented, except as to the sale of petroleum, of which we seem to have a monopoly. But even this commodity reaches the East by transshipment on English and Italian steamers from Liverpool or Genoa. Other American products are disposed of in small quantities, but almost exclusively through the intervention of European merchants, who feel only a secondary interest in enlarging such trade.

The reason for our failure is not far to seek. The nations of Europe, which have appropriated to themselves the commerce of the East, have done so by establishing and subsidizing lines of steamers, which at regular and short intervals call at all the principal ports of the Mediterranean, carrying such merchandise as the sagacity of European merchants has found to be in demand and salable, and making up their return cargo from such productions as are desired in European markets. Agencies are established at all important places, where the retail or small merchant may examine samples and make his purchases, without being obliged to calculate the rates of foreign exchange, or to wait six or eight months after ordering his goods and depositing the purchase money for the consignment to reach him.

European merchants and manufacturers have taken great pains to adapt the quality and style of their goods to the customs, tastes, and prejudices of the Oriental people. This is a most important point, as color, weight, shape, and size, such as they have been accustomed to, are always insisted upon in the East.

By observing the methods I have indicated the Europeans have built up, on the shores of the Mediterranean, a large trade, which is constantly increasing, and which promises in the future to be immense.

If America is to compete for the commerce of the East our merchants, manufacturers, ship-owners, and perhaps our government, must do just what has been done by the nations of Europe. We must have a line or lines of steamers regularly circumnavigating the Mediterranean Sea, touching, say at Athens (the Piræus), at Constantinople, the center and distributing point of a vast district, at Smyrna, the great emporium of Asia Minor, Rhodes, Cyprus, Beyrout, Jaffa, Alexandria, Tripoli, Tunis, Bona or Algiers, and Tangier. These points could be constituted centers, where responsible and intelligent agents should be located, and from which other places in the surrounding countries, through subordinate agencies, could be supplied with an assortment of such American productions as appeal to the wants of the native inhabitants.

Rates of interest rule in the Turkish dominions from 12 to 20 per cent. per annum. A merchant desiring American products is obliged as a preliminary step to deposit his money in an Ottoman bank. Then the London banker is notified of the deposit. He informs his New York correspondent. Finally the manufacturer or merchant in the United States is notified as to what is wanted, that payment is provided for, and he proceeds to fill the order. Practically from six to eight months elapse after the order is given before the Eastern purchaser receives his consignment. In the mean time he has lost from eight to twelve per cent. interest on his deposit, a reasonable profit in itself on the investment he has been induced to make. Under such circumstances competition with Europe is impossible. If, on the other hand, our goods were on the ground, in the control of agents devoted to our interests, where they could be inspected and selected without delay, where the price could be paid in the money of the country, I am confident that there is

a great variety of commodities which the United States can furnish as cheaply as any other nation, and with reasonable profit.

If the method I have suggested were adopted much of the loss in exchange could be avoided, as the ships which brought our own productions would take back to America return cargoes of dates, raisins, figs, oranges, lemons, ivory, carpets and rugs, esparta grass (for making paper), wine, olive-oil, olives, cork, perfumery, hides and skins, iron ore, very rich and very cheap, from North Africa, and many other articles peculiar to, or abundant in the East. These could be purchased with the proceeds of our export cargoes, and the business could be transacted through local banking houses.

The Oriental people are slow to move, and find it difficult to get out of their old grooves of custom. It is not, therefore, to be expected that our trade with them would be immediately and largely remunerative; nor is it likely that an American steamship line would be at once self-supporting. Other countries have built up their commerce by subsidizing steamship lines.

I am aware of the prejudice in the United States at this time against subsidies of all kinds, but I do not sympathize with that sentiment. We want a mercantile marine and a foreign market for our products. If this can be secured by individual exertions or by combinations of merchants, manufacturers, and capitalists, very well; if not, then I respectfully submit such an enterprise might properly receive government assistance.

The Turkish dominions, Greece, Algeria, and Morocco, are so far away from the United States that our people hardly appreciate the number of their inhabitants or their condition and wants.

The Turkish Empire has a population of 47,000,000, of which Syria has about 1,000,000; Palestine, 300,000; Tunis, 2,100,000; Egypt proper, 5,500,000; and Tripoli, 1,000,000. Algeria has 1,400,000; Greece, 1,700,000; and Morocco, about 9,500,000.

This vast number of people live chiefly upon the simple products of their soil. Except as regards certain specialties, such as carpets, rugs, brass work, inlaid boxes, &c., they cannot be considered in any sense a manufacturing people. As their wants increase, under the civilizing influences of education, and contact with other nations, they must depend, for many years to come, upon foreign countries for their manufactured merchandise. Europe has not failed to observe the increasing demand for such commodities, and the several governments are vying with each other to secure the best and the most of commercial intercourse and profit. It would be a great misfortune if the United States did not enter the list with earnestness and determination. We have the good will of these people, and as far as customs regulations are concerned, throughout the Turkish Empire, we stand on a footing with "the most favored nations"; eight per cent. *ad valorem* being the tariff charge upon all imported articles. The export duties vary.

PRESENT CONDITION OF THE EAST.

I should, perhaps, convey a false impression, did I not say a word more concerning the present condition of the East. Centuries of misrule and oppression, the frequent intervention of foreign nations, not always for the benefit of Turkey, but oftener for their own advantage; the extravagance and recklessness of the ruling classes, the enormous taxation of all property, amounting in some instances, as in Egypt, to

50 per cent. of the gross product of the country, the personal and irregular exactions other than the uniform tax upon estates, the bigotry and tyranny of the Mohammedan religion, the corruption of the unpaid native courts, where judges depend for their compensation upon the contributions of litigants; the party paying most liberally securing the decision; the insecurity of life, liberty, and property, which takes away every inducement to make accumulations; all these things combined have kept the masses of the people in an abject and impoverished condition. An American laborer would starve upon the daily food of an Oriental. Fortunately a warm climate obviates the necessity for any considerable amount of clothing, and the dry atmosphere generally prevailing renders life in the open air possible.

Reforms in the government of Turkey are promised, and some improvement has been made, but progress is very slow. As the young men and women in increasing numbers are becoming educated and civilized, the demand for better government and greater security becomes more pressing and more effective. A perceptible advance is certainly being made.

EGYPT—COURTS.

A most important movement in the interest of foreigners residing or doing business in that country has been inaugurated and is now in full operation in Egypt, namely, the establishment of the mixed court, in which the United States is most honorably and ably represented. In this tribunal the rights of all foreigners are adjudicated honestly, impartially, and according to law; and its judgments are uniformly enforced.

If this system could be extended to all other Turkish possessions, it would be of immense advantage to foreign trade and commerce.

The present Khedive of Egypt, whom I met in a very informal and friendly way, is exceedingly well disposed towards the United States, and encourages commercial intercourse. He presides over a magnificently fertile country, and an impoverished but gradually improving people. If Egypt could be relieved from the burdens imposed at Constantinople, and could pay off the debt to French and English financiers, from which she has derived but little benefit, the advance of her people would be rapid and substantial. The Suez Canal, to build which Egypt mortgaged the future so largely, has undoubtedly been of great benefit to the world at large; but it was the evil genius of Egypt. Her bonds, issued for canal purposes, bearing 6 per cent. interest, sold *nominally* for 30 to 40 per cent. of their face, but in fact a considerable portion of this was eaten up by bankers and negotiators. The payment of the coupons upon these bonds, exacted by England and France on behalf of their citizens, has been a fearful hardship to the Egyptian Government and people. Six per cent. upon the par value of these bonds has always been paid, generally in cash, but occasionally to the extent of 1 or 2 per cent. in additional bonds.

TUNIS.

My attention has been called to the fact that it is doubtful whether, under existing treaties, Americans have the right to hold real estate in Tunis. It is not likely that any objection will be made, or any embarrassment experienced by our people under the present Bey, who is notably well disposed toward the United States, or, possibly, under his

successor; but it might be well to provide for future contingencies by a convention which should settle the question for all time to come.

ALGERIA.

Algeria seems to me to be in better condition than any other of the countries which I visited in the East or in North Africa. The French have done a great deal already to develop the resources of the country, and much more is in contemplation and progress. Turnpikes are being built in an excellent manner. Railroads are being constructed, which will soon extend from Tunis to Algiers, and perhaps from Algiers to the French settlements on the Senegal. Improved agricultural implements are being introduced, and substantial dwellings and business houses are being erected.

I journeyed the entire length of Algiers by rail and diligence, and everywhere observed the fields under a good state of cultivation, the vineyards thriving (an industry which is rapidly growing on account of the disease having attacked the vines in France), and generally there was the appearance of thrift and prosperity. It is true, however, that the French are slow colonists. First, because there is in France no surplus population to be disposed of, and for the additional reason that Frenchmen are rarely content to live outside their beloved France. Hence it is that after all these years of possession and occupation in Algeria the French are outnumbered by the aggregate of other foreigners. But they have done much for the colony, and I should not regard it as a misfortune if the French Government could have a legitimately acquired control of all North Africa; though I should hope that the present burdensome tax upon all foreign vessels entering Algerian ports would not be extended to other points or continued where it is.

The French are securing an influential footing in Tunis, which is more or less affected by its proximity to Algeria, and by the introduction of French railroads in that country.

TRIPOLI.

I was prevented by storms from visiting Tripoli, but the conditions surrounding that country are not essentially different from those of Tunis. Its trade is less in proportion to its population, but is, notwithstanding, considerable.

MOROCCO.

In Morocco very little real progress has been made, and that empire is in a fearful condition. Taxes are collected through the intervention of an armed force, and those governors of provinces or departments are considered the best who make the most presents to the Emperor. The government is a simple despotism, and human life is held cheaply in the hands of the ruling monarch. Especially is the condition of the Jews, of whom there are 350,000, most deplorable.

The Mussulmans being completely abandoned to sloth and insolence, the Jews exercise nearly all the arts of industry, and control most of the commercial traffic. But for them the condition of Morocco would be more unfortunate than it is. Yet they are regarded by the Mohammedans as unclean dogs, entitled to no respect, and unworthy to live. A few of them, it is said, the more wealthy and influential, in fact enjoy the protection of foreign representatives, notwithstanding international laws in this regard. But this excites jealousy and a spirit of revenge, so that the condition of the great mass, the unprotected, is all the worse

on account of the privileges enjoyed by the few. Cannot something be done by the United States in their behalf?

I have reason to think that this subject has recently been under consideration and discussion by the English, French, Italian, and Spanish Governments, with what result I am not informed.

Neither Jews nor any other persons, except Mohammedans, are permitted to testify in the courts of Morocco, or their oaths are disregarded, and all the laws are framed in a special manner to favor Mohammedan subjects.

In the interest of humanity it would be well if the Christian nations of the world could in some way intervene, by way of a mixed commission or otherwise, to establish in Morocco greater equality of rights, and a better and more impartial method of administering justice.

Morocco is not a large consumer of foreign products. The poverty, habits, and prejudices of the people have so far prevented. Of the little trade existing, France has the greater share, owing to her proximity through Algeria, and the convenience of Marseilles as a shipping point.

About the only article imported from the United States is a low grade of flour in seasons when the crops fail in Morocco.

The chief exports from Morocco are wool, almonds, dates, goat skins, hides, and olive oil, with occasional shipments of beans and grain, in fruitful years, and for a limited time only. The English, French, and Belgian markets take most of these articles, though beans and corn are sometimes exported to Portugal.

AMERICAN PRODUCTS.

American productions most in demand in the Turkish Empire, in Greece, the islands of the Mediterranean, and Morocco, are:

FIRST.

Petroleum.	Rosin, turpentine, tar, and pitch.
Cotton, and manufactures of, colored and white.	Butter.
Candles (spermaceti).	Cheese.
Copper manufactures.	Potatoes.
Iron bars of every description (especially crowbars).	Rice.
Nails, spikes, and tacks.	Starch.
Cutlery (common kind).	Refined sugar.
Sole-leather of all kinds, and morocco.	Carpets.
	Thread of every description.

SECOND.

Coal.	Steel in bars.
Agricultural implements.	Edge tools.
Glass and glassware.	Files and saws
Glue.	Fire-arms.
India rubber manufactures.	Lead in pig.
Stoves.	Household furniture.
Matches.	Clocks and watches.

THIRD.

Brass, and manufactures of.	Canned meats and fruits.
Bricks for parking.	Trunks and valises.
Brooms and brushes of all kinds.	Varnish.
Lamps.	Vinegar.
Paper and stationery.	Zinc, and manufactures of.
Plated ware.	Cheap notions of all varieties.
Bacon and hams.	

I have mentioned these classes in the order of their importance, with reference to salability.

The articles produced in the East and in North Africa required in the United States have been enumerated in the body of this dispatch.

I am under many obligations to Mr. Heap, consul-general, and McGargiulo, interpreter of the United States legation at Constantinople; to Mr. Smithers, consul at Smyrna; to Consul Edgar, at Beyrout; Consul-General Farman, and Mr. Van Dyck, consular clerk at Cairo; to Consul Fish at Tunis; Mr. Grellet, vice-consul at Algiers; and to Mr. Sprague, consul at Gibraltar, for important aid rendered me in obtaining information regarding the several countries.

I have thus imperfectly reported the result of the special mission to the East and North Africa with which I was honored by the Secretary of State.

EDWARD F. NOYES,

Envoy Extraordinary and Minister Plenipotentiary.

LEGATION OF THE UNITED STATES,

Paris, March 10, 1880.

COMMERCE OF THE WEST COAST OF MADAGASCAR.

REPORT BY CONSUL BACHELDER, OF ZANZIBAR.

The only port of importance for trade on this coast is Majunga, situated in latitude $15^{\circ} 42' 54''$ south, longitude $46^{\circ} 20' 30''$ east.

This is a port of considerable importance, and its principal exports are dry salted hides and India rubber. The salted hides are shipped by sailing vessels mostly to New York and Boston. A few go to France. India rubber is exported in a limited quantity, owing to the light collections; but the great demand for this article will no doubt cause larger collections in the future.

The imports from the United States are brown sheetings and kerosene oil; and from other countries cotton manufactures, crockery, soap, and gunpowder. The American sheeting, owing to its superior quality, finds a ready sale, though prices are kept low by competition of other goods of the same class from England and India, which, though of much inferior quality, find purchasers on account of their low cost.

The money of all this coast is the five franc of France, and business is considerably restricted at present in Majunga, owing to its great scarcity.

A duty of 10 per cent. on the value of goods at the port of entry is levied on all imports, and a charge equal to about 5 per cent. on exports.

At Majunga two American houses have agencies, and it is through them that produce is exported to America and goods imported from there. A large French firm is also represented there.

The French possession, Nos Beh, an island just off the northwest coast, receives a considerable quantity of Madagascar produce, and is a free port. There are in Southern Madagascar several other ports, though of no considerable trade at present. The largest of these ports are Mientarauc, Murundava, and Mohaba. Mientarauc exports principally ebony to a market at Nos Beh.

The trade of Murundava and Mohaba is principally with the ports at the Cape of Good Hope.

Up to April of the present year (1880), Majunga had for several years a regular monthly mail service by a line of fine iron steamships of the British Indian Steam Navigation Company, running from Zanzibar via Nos Beh and Mayotta, another French possession about 200 miles to the northwest of Majunga. At Zanzibar connections were made with the same company's service to Aden. On April last this service was given up, as the French Government declined to renew the subsidy they had been paying the company for carrying a mail to their possessions, and without this help the line could not pay expenses.

LEONARD A. BACHELDER, *Consul.*

UNITED STATES CONSULATE,
Zanzibar, August 26, 1880.

TRADE OF TRIPOLI.

REPORT BY CONSUL JONES.

I have the honor to transmit, herewith inclosed, my report on the trade of this port for the quarter ending June 30, 1880.

The aggregate trade of this port for the past quarter amounts to \$1,175,088.79, of which \$817,631.67 are imports, and \$357,457.12 are exports, showing a balance in favor of imports to the amount of \$460,174.55.

This large excess of imports over exports is due principally to the large amount of cotton goods imported, which is generally greater in the second and third quarters of the year, owing to the fact that this season is generally chosen for sending caravans into the interior. Caravans, however, leave at all seasons of the year.

The principal articles of import during the last quarter have been cotton goods, woolen goods, sheep, camels, oil, and petroleum.

Cotton goods have reached this market to the value of \$483,600.10. Woolen goods to the amount of \$47,864. Sheep and camels are still arriving. The former to the amount of \$27,146, the latter to \$2,123. Oil reached this market during the last quarter to the amount of \$27,511.18. Petroleum was imported to the value of \$1,948.72.

The principal articles of export during the last quarter were, as usual, ostrich feathers, ivory, and esparto grass. Ostrich feathers were shipped to the amount of \$153,214.98. Ivory to the amount of \$11,058.57. Esparto grass to the amount of \$115,992.30.

I have again to report a derangement of the currency at this port. This has been in consequence of the importation by certain merchants here of a considerable quantity of counterfeit medjities. This coin was manufactured in Europe (the exact country not ascertainable), and has an intrinsic value of 3 francs, whereas the good coin of the same name has an intrinsic value of 4 francs nearly, and in commerce it is worth 4 francs and 40 centimes. Upon its arrival here it was exchanged by the importers for gold to merchants who, believing in its genuineness, have used it in their various business transactions. Thus much of it has been disposed of in the esparto market, and the poor Arab has been the eventual loser. Besides the direct loss sustained by those who have their money in medjities—for, of course, the good medjities have for the present decreased in value, owing to the difficulty of distinguishing them from the counterfeit—it will create a suspicion as regards the genuineness of the other coins in circulation here, which will not be without its inconvenience.

The persons who imported this counterfeit coin are among those who signed the letter which appeared in the Malta newspaper, a copy of which I forwarded to the Department some time since, and a copy of which I see has been reproduced in the American Exporter. During the last six months several circulars from the Pasha have been received at this consulate relating to the introduction of imitation gold and silver lace, which is sold as the genuine article, and to the irregularities which take place in the esparto market. I do not enter into the minutiae of these subjects, as they could scarcely be of interest to the American reader.

I beg to state that the reason this report has not been forwarded sooner is owing to the fact that there has been considerable delay in receiving the returns of imports and exports.

CUTHBERT B. JONES, *Consul.*

UNITED STATES CONSULATE,

Tripoli of Barbary, September 28, 1880.

CONTINENT OF AMERICA.

AMERICAN TRANSIT TRADE THROUGH CANADA.

REPORT BY GUSTAVUS GOWARD, COMMERCIAL AGENT AT COLLINGWOOD.

Within the last few years there has awakened into renewed life a transportation route for American products, consisting of a combined rail and water communication, having for a place of transshipment this port of Collingwood.

The carrying trade of this line has assumed such dimensions in becoming a formidable competitor to established American routes as to affect the interests of the United States, and calls for the special attention of our government in respect to its legality, the carrying in foreign bottoms, the regulations of transshipment and transit through Canada, the customs and consular restrictions and forms, together with the revenue to be derived from the same.

Technically considered, the subject of this dispatch may be denominated as the transportation of American goods from one port or place in the United States to another port or place in the United States in transit through a foreign territory contiguous to the United States, by a combined rail and water communication.

The ports or places in the United States from which these goods leave for the East are principally Chicago, Milwaukee, Sault Ste. Marie, and Duluth; converging in various lines of steamers for the most part at Collingwood, where transshipment from the vessel to the car takes place. From this point they are carried over the Northern Railway of Canada to Toronto, whence they are reshipped for Ogdensburg, and occasionally other ports or places in the United States. This route, as will be perceived, is a combined rail and water communication.

With goods going West the route is simply reversed. In either case the goods or merchandise are American, principally grain for the East, and general freight, a return cargo, west bound. This route is controlled and owned by Canadian and English subjects. The steamers are Canadian bottoms, and the Northern Railway, for the greater part, is owned by English stockholders.

The profits of carrying of course go to foreigners, and consequently are taken from American railroads and the carrying trade of American coasters and steamers.

In order to show the extent and increase of this trade, I submit the following statistics, compiled from official sources:

Quantity and value of grain and merchandise received during 1878 and 1879.

1878.—Grain of various kinds.....	bushels..	1,570,532
Value.....		\$724,803
General merchandise.....	tons..	21,670
1879.—Grain of various kinds.....	bushels..	3,895,856
Value.....		\$2,281,077
General merchandise.....	tons..	65,275
Increase during 1879:		
Grain in general.....	bushels..	2,325,414
Value.....		\$1,526,351
General merchandise.....	tons..	36,605

A continued rapid increase is anticipated this year, and preparations have been made accordingly. Two, if not three, new steamers have been added to the line, and the old ones have been enlarged. Mr. Cumberland, the managing director of the Northern Railway, has gone to England to consult with the English stockholders, as I am informed, for the purpose of increasing the running facilities of his road. The expectation is, and the promise looks well, that *via Collingwood will be the great grain route to the seaboard*. This expectation is heightened by the proposed (and determined upon) railroad route from Saint Paul along the south shore of Lake Superior to Sault Ste. Marie. A glance upon a map of the great lakes will show the directness of this route, and the consequent future loss to the carrying trade of the United States, unless such restrictions and regulations are put into force in relation to transit of American goods through a foreign territory as will place on the same footing foreign and American carriers, enabling thereby the latter to compete with the former.

Even if the future loss to the carrying trade of the United States is not taken into consideration, and even if no fears are excited by the competition, yet the illegality and irregularity in the present method of transportation and transshipment are such as to call for the serious attention of the Department.

In the first place, these goods and merchandise do not appear to be shipped by a route legalized by the Revised Statutes and United States Customs Regulations. As far as I have been able to ascertain from the authorities before me, and by inquiry at the Treasury Department, *no such bonded route exists via Collingwood*.

In this respect privileges seem to be granted to this route that the established bonded routes in Canada do not possess. On the face of it unfair discriminations appear to be made in favor of Canadian vessels and railways in privileges not granted to similar American carriers by the Canadian Government. In the bonded routes between Suspension Bridge and Buffalo on the eastern termini, and Port Huron and Detroit, the western termini of such routes, there is a system of sealing of cars by United States Government officials not in vogue on this route. While the United States has customs officials at Toronto and Collingwood, they do not attempt to seal cars containing American goods in transit between the two points, but leave the matter to be attended to, such as it is, by Canadian officials in charge. By what authority these Canadian officials act in handling American goods, I am unable to say, and ask for information on that point in order to know how far United States consular officers should recognize Canadian officials and Canadian locks when they are used upon American goods. Furthermore, the United States customs officials stationed at Toronto and Collingwood appear to

have an uncertain character, being in Canada only by sufferance, and having no official status as recognized by the Canadian Government. While there should be no objection to such officers by the consuls, for they eventually must have assistance in this matter, yet the same duty could be performed by duly recognized consular officers and their deputies at these points. If the two offices cannot be combined, the duties of each should be so defined as to secure harmony of action.

Under the past arrangements at Collingwood there has been great confusion in shipments. It has been impossible for the consular officer to keep any track of them. They are not bonded, and lie loosely in the care of the railroads, being unsealed and in no way distinguished by official marks. Whether or no they are products for export from Canada cannot be ascertained, except after examination of papers. It appears to me that the consular officer, technically, should regulate and authenticate all shipments from Canada to the United States. As at present conducted, the opportunities for fraud at the points of arrival and departure in Canada are very great, and in the transit a system of smuggling and substitution might easily prevail. What might leave as through freight might become an export or product of Canada. Boxes and packages might be replaced by exact counterfeits, similar in appearance and with like marks and addresses. If the carrying of goods through Canada in sealed cars offers, as has been maintained, numerous opportunities for violating the revenue laws, how much greater are the opportunities where such goods are carried in cars not sealed by the United States officers, and on a route where the bulk is broken and manifests changed and divided, and, worse still, loaded on board of foreign steamers and vessels in unsealed compartments and under hatches unsealed; every shipment on two voyages or water transits from one to three days each before re-entering the United States. Under such a means of transportation, in transit, in custody of foreign subjects, what prevents the defrauding of the revenue of the United States, guarded only by a system of checking off and comparison with the manifests at the points of transshipment and arrival? What recourse has the United States where the route is not bonded, and where *no oath binds* the shippers or carriers? Again, what would such an oath be worth in the courts of the United States unless taken before, or authenticated by, the United States consular officer?

The result of my letters and communications on this subject has been that a special agent of the Treasury, accompanied by other Treasury officials, proceeded to Collingwood to inspect the state of affairs. His report, I am happy to say, substantiates my assertions. Certain improvements have been ordered, such as putting the goods in a separate and sealed warehouse at Collingwood, the keeping of books of record, and the requirement that special invoices corresponding with the shipments from the last port of departure in a contiguous foreign territory for the United States should be made out, the latter particularly recommended by myself and called for by the collector of customs at Chicago. But even these are inadequate in protecting the revenue and interests of the United States, in which he agrees. Neither is the dilemma of the consular officer relieved as regards such goods as described becoming foreign goods when sent in transit through a contiguous foreign territory by a route not bonded and not under seal of the United States. Such goods coming into Canada without the seal of the United States, I maintain, become foreign goods, and when they leave Canada for the United States require, like other foreign goods, the authentication of the consular officers.

This view and the doubt as to the legality of the route in question appears to be strengthened by a recent ruling of the Treasury Department, sent to the collector of customs at Chicago, based upon section 4347 United States Revised Statutes, to the effect that no vessel of foreign nationality, Canadian or otherwise, can transport American products of any character from one port or place in the United States to another port or place in the same and unload the goods without entailing a forfeiture thereof. The question arose, it is stated, upon a case given as follows: Whether a Canadian vessel could clear from Manistee with a cargo of American lumber for delivery at Buffalo, and having delivered her cargo proceed on her way to a home port. The Treasury officials, I am informed, say this cannot be done. How, then, can grain and general freight be transported in Canadian bottoms and over an intervening land carriage, viz, a combined rail and water communication with *two transshipments* from one port to another port in the United States, as, for instance, the Collingwood route; and this especially when the bulk is broken and the goods are not under United States seals? These goods claim to be carried in accordance with regulations governing transportation of merchandise to, from, and through the British possessions in North America, under the laws and the treaty of Washington. This route was not in operation (and I doubt very much if it was anticipated, even in thought) at the time of the making of the treaty of Washington. For it appears to me that with such a view a different phraseology would have been used. Be that as it may, under its cover rules and regulations have been formulated.

Article XXX of said treaty reads that—

Subjects of Her Britannic Majesty may carry in British vessels, without payment of duty, goods, wares, or merchandise from one port or place within the territory of the United States, upon the Saint Lawrence, the great lakes, and the rivers connecting the same, to another port or place within the territory of the United States as aforesaid: *Provided*, That a portion of such transportation is made through the Dominion of Canada *by land carriage and in bond*, under such rules and regulations as may be agreed upon between the Government of Her Britannic Majesty and the Government of the United States.

Article 19 of the Treasury Regulations, founded on said treaty, is as follows:

Goods, wares, and merchandise in transit from one port or place within the territory of the United States to another, by a *route part of which is by land carriage* through the Dominion of Canada and a part by the great lakes and the rivers connecting the same, or by the river Saint Lawrence, may be transported by water, in either British or American vessels, from ports on the northern frontier of the United States to ports on the Canadian frontier for transshipment to railway cars, and from ports on the Canadian frontier, at the termini of railway transportations, to ports on the northern frontier of the United States, in either British or American vessels.

At the first port or place of transshipment in Canada, the merchandise, or the packages thereof, if corded and sealed, shall be examined and compared with the special manifest accompanying the same, and the result thereof certified to by some officer of the United States or Canadian customs; the manifest shall then be passed over to the conductor of the cars into which the merchandise shall be laden for transportation through Canada. Examination, &c., in the same manner shall be had at the second place of transshipment, or at the terminus of railway transportation, and at the port or place where the merchandise shall be returned into the United States.

As to what the spirit or intent of the law is, I would not presume to interpret, but I am led to suppose that from the fact that the route above mentioned was not in operation at the time of the making of the Treaty of Washington, that two transshipments on the route were not included, and that neither were the taking on board of goods, &c., by a Canadian vessel at one port in the United States, and the delivery of

the same goods, &c., by another Canadian vessel at another port in the United States contemplated by the law. To all effects and purposes, as far as the ports of departure and arrival in the United States are concerned, American goods are carried in Canadian bottoms throughout the transportation. In which case it clearly violates section 4347, Revised Statutes, before cited. Even should the treaty of Washington cover the case, the law does not appear to be enforced relative to the bonding.

In consideration of the facts and reasons presented I would respectfully ask if the consular officer at Collingwood is *authorized to pronounce American goods* coming into Canada without United States custom seals, and over a route not bonded, as *foreign goods*; and to require the consular authentication before final departure for the United States?

Whatever the decision in regard to the preceding, I would recommend that the special invoices, now happily about to be adopted, corresponding with the shipments from the last port of entry, be made out and sworn to by the shipper (agent, consignee, conductor, or master) before the proper consular officer, and that a copy of the said invoice be filed in the United States consulate. This course would prevent confusion; each shipment would correspond with its invoice; there would be no delay at the customs, or confusion at the port of departure, and the oath would serve for the prevention, detection, and future punishment of any fraud. There would then be corresponding records at both ends of the voyage of great service as regards statistics, accident, losses, insurance, and lawsuits.

The adoption of some such customs regulation as the following would serve the purpose:

Goods or merchandise shipped from one port or place to another port or place in the United States in transit through a foreign territory (Canada) contiguous to the United States, by a combined rail and water communication, requiring transshipment and consequent change of manifest, should be accompanied by special invoices, corresponding with the shipment from the last port of departure in the foreign country contiguous to the United States; and that such invoices should be sworn to before the United States consular office at the final port of departure for the United States.

GUSTAVUS GOWARD,
Commercial Agent.

COMMERCIAL AGENCY OF THE UNITED STATES,
Collingwood, May 16, 1880.

PRINCIPAL SECURITIES DEALT IN ON THE MONTREAL MARKET.

REPORT BY CONSUL-GENERAL SMITH.

I herewith transmit a tabular statement showing the value of the principal securities dealt in on the Montreal Stock Exchange for eight years past, during the last week in June of each year. It also shows the highest and lowest prices at which these stocks have been sold during the last eight years.

This tabular statement has been prepared with care from the best obtainable sources, and I believe it to be quite correct.

I have prepared this statement and transmit it to the Department, believing that it exhibits, as clearly as perhaps any other collection of such facts could, the fluctuation in the prosperity of business in the Dominion

for a period commencing prior to the panic of 1873 in the United States down to the close of June last.

By a glance at this statement it will be seen that the highest range of prices was, in nearly every instance, reached during the years 1874 and 1875, and the lowest level appears to have been reached in 1879. It will be seen that in nearly every case these stocks were very much lower in June, 1879, than in June, 1873. In some instances the fall in prices was very great. It must be remembered that all the prices exhibited in this statement were in gold values. It is gratifying to note that the prices of these stocks, so far as transactions are recorded, show that in the month of June, 1880, there was a large advance over the prices of June, 1879. The fall in the value of these stocks more or less accurately measures the period and the depth of the business depression through which the business of Canada passed between 1873 and 1879, while the advance of the last year would seem to indicate a general revival of business and business confidence.

Perhaps the depression and subsequent revival of business is pretty accurately measured by the course of the price of the stocks of three of the largest institutions on the list, to wit, the Bank of Montreal, the Merchants' Bank, and the Bank of Commerce. These three institutions have a paid-up capital of between \$23,000,000 and \$24,000,000. The price of the stock of the Bank of Montreal fell between March 27, 1874, and January 29, 1879, 74½ per cent. The price of the Merchants' Bank stock fell between June 1, 1874, and August 8, 1879, 53 per cent., while that of the Bank of Commerce fell between December 12, 1874, and January 29, 1879, 42½ per cent. The average fall in the value of the stocks of these three large institutions from the highest to the lowest point was more than 56 per cent.

The price of the stock of these banks advanced from the lowest point reached during the eight years until the last week in June is as follows: The Bank of Montreal, 12½ per cent.; The Merchants' Bank, 23½ per cent.; and the Bank of Commerce, 25 per cent. The average increase has been 17 per cent. It is proper to add that by the reports in the daily newspapers, the value of these stocks has continued to advance rapidly since June last.

If I am right in assuming that the fall in the price of stock in the Montreal market measures, with some degree of accuracy, the great business depression of 1878 and 1879, and that the recovery in the price of these stocks since 1879 is, in like manner, a reasonably accurate measure of the restoration of business prosperity, the facts exhibited by this tabular statement are very satisfactory as to the present and prospective prosperity of trade and business in Canada.

J. Q. SMITH,
Consul-General.

UNITED STATES CONSULATE GENERAL,
Montreal, September 15, 1880.

Statement showing the principal securities dealt in on the Montreal Stock Exchange, June 30, 1880.

Banks.	Capital authorized.	Capital subscribed.	Capital paid up.	Shares, amount.	Prices sold at fourth week in June, each year.							
					1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.
Montreal	\$12,000,000	\$12,000,000	\$11,999,200	\$200	1791	1841	183	1881	1621	1621	1361	1371
Ontario	3,000,000	3,000,000	2,996,756	40	1041	112	105	1011	98	98	61	76
Merchants'	6,000,000	6,000,000	5,995,766	100	111	1161	109	911	671	771	76	941
Molson's	2,000,000	2,000,000	1,998,881	50	111	115	1121	110	109	93	75	84
Toronto	2,000,000	2,000,000	2,000,000	100	100	200	183	184	1521	1361	103	127
Commerce	6,000,000	6,000,000	6,000,000	100	1181	1221	1261	1201	1111	1111	103	1201
Du Peuple	1,600,000	1,600,000	1,600,000	50	107	109	1021	941	87	72	49	721
Ville Marie	1,600,000	1,600,000	1,918,450	100	N.T.	N.T.	98	N.T.	74	B.C.	C.	N.T.
Eastern Townships	1,500,000	1,469,600	1,881,989	50	N.T.	N.T.	117	B.C.	N.T.	B.C.	N.T.	N.T.
Quebec	3,000,000	2,500,000	2,500,000	100	1081	1041	921	89	N.T.	B.C.	N.T.	N.T.
Union of Lower Canada	2,000,000	2,000,000	1,992,980	100	101	1041	921	N.T.	N.T.	B.C.	N.T.	N.T.
Hamilton	1,000,000	1,000,000	1,737,150	100	99	921	921	N.T.	N.T.	N.T.	N.T.	N.T.
Donnison	1,000,000	970,250	970,250	50	N.T.	N.T.	110	N.T.	N.T.	N.T.	N.T.	N.T.
Maritime	2,000,000	978,630	978,630	100	871	93	95	N.T.	N.T.	N.T.	N.T.	N.T.
Nationale	2,000,000	2,000,000	2,000,000	100	1081	111	102	N.T.	N.T.	N.T.	N.T.	N.T.
Exchange	1,000,000	1,000,000	1,000,000	100	101	102	981	B.C.	N.T.	B.C.	N.T.	N.T.
Jacques Cartier	500,000	500,000	500,000	25	106	106	571	321	851	411	61	77
Federal	1,000,000	1,000,000	1,000,000	100	N.T.	N.T.	N.T.	N.T.	N.T.	104	99	113
MISCELLANEOUS.												
Montreal Telegraph	2,000,000	2,000,000	2,000,000	40	190	1911	1561	160	1081	113	831	991
Donnison Telegraph	1,000,000	600,000	600,000	50	N.T.	N.T.	1031	95	911	84	751	N.T.
City Gas	4,000,000	2,000,000	1,800,000	40	121	1231	1271	168	148	1481	1141	124
Montreal Loan and Mortgage	1,000,000	1,000,000	550,000	50	N.T.	N.T.	N.T.	N.T.	122	N.T.	N.T.	N.T.
City Passenger Railway	1,300,000	1,600,000	600,000	50	273	189	180	220	163	N.T.	80	90
Richelieu and Ontario Navigation	2,000,000	1,500,000	1,500,000	100	N.T.	N.T.	88	95	631	531	411	411

[N.T., no transaction; B.C., books closed.]

Statement showing the principal securities dealt in on the Montreal Stock Exchange, June 30, 1880—Continued.

Banks.	Highest price sold at during eight years.	Lowest price sold at during eight years.	Dividend days.	Dividends last six months, 1879.	Total dividend, 1879.
Montreal	March 27, 1874, 1903	January 29, 1879, 125	June 1, December 1	5 per cent.	10 per cent.
Union	July 22, 1874, 1134	August 19, 1879, 559	do	3 per cent.	6 per cent.
Mechanics	June 1, 1874, 124	August 8, 1879, 71	do	do	1 1/2 %.
Molson's	November 19, 1874, 1174	August 15, 1879, 589	April 1, October 1	do	do
Toronto	April 4, 1873, 2124	June 2, 1879, 1063	June 1, December 1	3 1/2 per cent.	7 per cent.
Commerce	December 12, 1874, 138	January 29, 1879, 951	January 1, July 1	4 per cent.	8 per cent.
D. Dupire	January 13, 1875, 1123	August 8, 1879, 39	March 1, September 1	2 per cent.	4 per cent.
Ville Marie	February 18, 1875, 110	September 6, 1879, 29	February 1, August 1	do	do
Eastern Townships	May 1, 1875, 124	January 15, 1879, 90	January 1, July 1	3 1/2 per cent.	7 per cent.
Quebec of Lower Canada	April 29, 1875, 1164	September 27, 1879, 90	June 1, December 1	3 per cent.	6 per cent.
Hamilton	April 9, 1874, 108	August 23, 1879, 491	January 1, July 1	2 per cent.	4 per cent.
Montreal	November 8, 1879, 101	August 17, 1875, 90	June 1, December 1	4 per cent.	8 per cent.
Nationale	December 13, 1879, 130	February 5, 1874, 1033	do	do	do
Exchange	March 29, 1874, 93	August 26, 1877, 653	May 1, November 1	do	do
Jacques Cartier	September 9, 1874, 115	November 23, 1876, 103	do	2 1/2 per cent.	5 1/2 per cent.
Federal	May 2, 1875, 1074	August 5, 1879, 30	January 1, July 1	2 1/2 per cent.	5 1/2 per cent.
	May 10, 1873, 100	February 23, 1879, 28	June 1, December 1	3 1/2 per cent.	7 per cent.
	May 14, 1880, 108	September 16, 1876, 92	do	do	do
MISCELLANEOUS.					
Montreal Telegraph	January 3, 1873, 229	October 7, 1879, 81	January, July	4 per cent.	7 per cent.
Dominion Telegraph	April 21, 1873, 1091	June 10, 1879, 60	do	2 1/2 per cent.	5 per cent.
City Gas	March 28, 1873, 265	November 19, 1878, 114	March 15, September 15	5 per cent.	10 per cent.
Montreal Loan and Mortgage	February 19, 1877, 128	January 27, 1880, 91	do	3 1/2 per cent.	7 per cent.
City Passenger Railway	November 8, 1873, 310	March 17, 1879, 75	April, October	5 p. c. per annum.	\$2.50 per share.
Richelieu and Ontario Navigation	August 27, 1873, 1824	September 23, 1879, 363	March, September	5 1/2 p. c. per annum.	4 1/2 per cent.

CANADIAN EMIGRATION TO THE UNITED STATES AND WRECKING REGULATIONS.

REPORT BY CONSUL PACE, OF PORT SARINIA.

A very marked increase in the value of Canadian exports to the United States during the year ending June 30, 1880, as compared with the preceding year, has to be recorded. The revival of business in the United States furnishes our people with the means to purchase, and the continued depression of business in Canada obliges the Canadian producer to sell, and to this fact is largely due the increase in Canadian exports to the United States.

(CONTINUED BUSINESS DEPRESSION.

The tidal wave of business prosperity which is so general throughout the United States has not been felt to any extent in this province. The different political parties have different ways of explaining this long-continued cry of hard times; the party in power is assailed by the opposition in unmeasured terms, and the national policy (so called) of Sir John A. McDonald is made to bear its full share of unfavorable comment. By national policy is meant the recent change in the Canadian tariff, the government of the Hon. Alexander McKenzie having been defeated on this issue.

CANADIAN EMIGRATION.

Canadian emigration to the United States this year almost amounts to an exodus, and the newspapers, which formerly devoted space to criticising, explaining, or denying the correctness of my former reports upon this subject, have generally fallen into line, and they now admit the truth as revealed by honest mathematics. The total number of emigrants from Canada direct who crossed at this point in search of homes in the United States for the year ending June 30, 1880, was 75,059. I have no means of ascertaining the number of Canadian emigrants who may have embarked at this point for Manitoba, and however large that number may be no portion of them are included in this report; in speaking of Canadian emigrants I have reference only to those who have declared their intentions to become permanent residents of the United States. The wall of prejudice which for many years seemed to hold the people of Canada aloof from us is no longer a prominent feature; that dislike for the Yankee (as Americans are usually termed in Canada), which was doubtless largely engendered by the war of 1812, is now principally confined to the few aged veterans of that war or their immediate descendants, those whose childhood recollections carry them back to the stirring scenes of that period. With this class there appears to be still a lurking dislike for everything American; but when the grave closes over the old soldier the hatred of a lifetime is also buried, and the young Canadian, with enlarged views and a better understanding of the nature of men, and whose introduction to us comes only through the friendly

avenues of commerce, gradually loses whatever of dislike or animosity he may have inherited from his father.

CANADIAN WRECKING REGULATIONS.

In previous communications to the Department I have called attention to the regulations of Canada relating to wrecks and wrecked property in Canadian waters; and the magnitude of the interests involved, together with the manifest injustice of these rulings, as they relate to American shipping interests, induces me again to call attention to the subject. By reference to a map of the lakes it will be observed that our shipping (especially the grain-carrying fleet of the great lakes) must of necessity navigate Canadian waters to a great extent on the route from Lake Superior and Lake Michigan to Buffalo, and owing to the terrific gales which in this latitude are so prevalent in autumn our vessels are frequently diverted from their course and driven ashore on the Canadian side; and under the present regulations relating to wrecks a vessel stranded in Canadian waters meets with a double disaster. To be wrecked is something which a sailor always regards with horror, but to be denied the privilege of seeking immediate relief is what our exasperated seamen very frequently term an outrage. If our captains were allowed (when their vessels are stranded in Canada) to obtain the immediate and unrestricted use of our own powerful steam-tugs the disasters in a great majority of cases would only be partial; but compelled as they now are to await the slow process which requires them to report to the nearest customs officer before entering upon the duty of saving the ship, they might perhaps in many cases save money and time by abandoning the vessel to the underwriter at once, for it is plain to the practical sailor that the aid which is the most valuable to a ship in distress is the aid which comes soonest to the rescue.

Some changes have been made in Canadian wrecking regulations within the past year, and these changes modify, to some extent, the more rigorous rules of former years, but the reformation is by no means complete. Under former regulations an American tug was not permitted under any circumstances to engage in the rescue of any wrecked vessel or property in Canadian waters. This rule has been so modified that now an American steamer may obtain permission to render assistance to a vessel wrecked in Canadian waters, provided it may appear to the Canadian customs officer that the wrecked vessel in question is in immediate danger of total destruction, and provided further that there is no Canadian steam-tug conveniently at hand to render the desired services. But while the Canadian officer is investigating the condition of the wrecked vessel in order to determine whether the vessel is in danger of becoming a total wreck, the elements, regardless of his opinion, carry on the work of demolition.

Having the right to navigate the waters of Canada in the ordinary pursuit of commerce, our seamen cannot understand why they should be restricted from asking and obtaining aid from any source when disaster overtakes them. Much feeling is sometimes manifested by our captains who are denied the privilege of obtaining the services of American wrecking tugs in times of trouble, and who are obliged to accept instead old and inferior vessels known as Canadian wreckers.

My advice is frequently sought by American vessel-masters as to the proper course to pursue under circumstances of the nature here described, and in some instances I have found it difficult to restrain the more impetuous from forcibly resisting these unfriendly regulations relating to

wrecks and wrecked property in Canadian waters. In a former communication to the Department upon this subject I called attention to the inferior and comparatively unseaworthy condition of Canadian wrecking tugs as compared with our own wreckers, and I now assert (not entirely as a novice, for I have had practical experience as a sailor) that, with but barely one exception, there is not upon the whole chain of lakes a wrecking tug of Canadian register worthy of the name. I am familiar with all the boats which figure on paper as the Canadian wrecking fleet, and the tug McArthur is the only vessel belonging to that fleet which may justly claim exemption from the charge of being herself a wreck. Should this wrecking fleet be arraigned in order for review, the practical eye of the American sailor would detect something fully as ridiculous as that shown in the play where Falstaff musters his recruits.

It may be proper to state that the entire wrecking fleet of Canada is owned or controlled by a company known as the "Canadian Wrecking Company"; this company has, therefore, a monopoly of the wrecking business in these waters. In the interests of justice I sincerely hope to see a further modification of wrecking regulations which enrich a company at the expense of our lake marine.

S. D. PACE,
Consul.

UNITED STATES CONSULATE,
Port Sarnia, June 30, 1880.

CANADIAN AND NORWEGIAN FISHERIES, AND AMERICAN FISHERMEN.

REPORT BY CONSUL HOLT, OF GASPÉ BASIN.

My former reports will have demonstrated that the business of this consular district is exceptional in its character, and limited almost exclusively to the affairs of the fisheries, and that this consulate and its agencies were established for the especial protection and care of American fishermen and American interests.

Various matters concerning this district, detailed in my reports embraced in the volumes of the "Commercial Relations" of 1871-'74, worthy of attention for reference, need not be reproduced here.

THE COD-FISHERY

continues to be managed and controlled in the old style, but not with the prosperous results now which have attended the fish trade for a hundred years past. Since 1876 the losses have been more general than the profits to the shippers, to the extent that many of them would find their financial standing seriously affected, were it not for their reserves of accumulated gains of previous years.

This depressing condition and prospect of the Canadian fish trade is attributed to the formidable competition of the Norwegians, who have steadily been inaugurating a system of keeping the markets of the world supplied with their fish, improved in its curing so as to be more adapted to the taste of the consumers in southern latitudes. Prices having declined, in consequence, at the ports of consignment, Canada does not appear to be able to compete profitably with Norway.

The most unfortunate effect is the reaction upon the local fisherman,

who finds the returns for his fish getting smaller each year. Their fishing in this neighborhood has been almost a failure this season. Many of them are under the hard grasp of poverty, and it is apprehended that government assistance will be required to save them from destitution the coming winter.

The following figures will show the decline in prices:

	Per quintal.
In 1876 fishermen received.....	\$5 00
In 1877 fishermen received.....	3 40
In 1878 fishermen received.....	3 20
In 1879 fishermen received.....	3 00
In 1880 fishermen received.....	2 70

The fish exported from Gaspé is shipped to Rio Janeiro, Bahia, Pernambuco, West Indies, Lisbon, Naples, &c., by the exporters generally in their own vessels, in which are imported, in the spring, goods from Great Britain, wanted on the coast, and salt for the fisheries from Spain and Turk's Island.

Freight, per tub of 128 pounds, is quoted to Rio Janeiro, at 5s. sterling; to Bahia, 4s.; Pernambuco, 3s. 9d. to 4s. Per tub of 112 pounds, to West Indies, 3s.; Naples, 3s. to 3s. 6d.; Lisbon, 2s. 9d.

AMERICAN FISHERMEN.

American fishermen do not sail in the waters of the Gulf in fleets, as was their custom years ago, but a few may be seen occasionally cruising about their old haunts with patient perseverance. As is well known, most of them remain on their own coast, where they have found better fishing, and generally have abandoned the exercise of their rights to the inshore fisheries of Canada, evidencing most emphatically their estimate of the value of the privilege, and justifying most fully the cause of the Hon. Dwight Foster, in his eloquent pleading to obtain a fair award before the Halifax Fishery Commission. Though it unfortunately proved a useless labor and expenditure of masterly argument and honest testimony to shield the United States, time has developed more clearly the truths then advocated, and makes it apparent that the case of the United States was, in point of fact, incontrovertible.

It may, probably, be supposed that the notable award of \$5,500,000 to the United States will last monumentally to remind future generations of what value an exaggerated fiction may be made to become if skillfully worked by adroit hands.

It is a pleasure to record that no shipwrecks have occurred to American fishing vessels in this consular district so far this season, and that the destructive gales in the Atlantic of August and September did not repeat the disasters on the shores of the Magdalen Islands of the 24th August, 1873, when many American fishing vessels were driven ashore.

The consular agent at the Magdalen Islands reports under date of the 14th ultimo that "a few American fishing vessels have been about Bujou Island and Bird Rocks of late for mackerel, and have fared well. The mackerel fishery about this island (Amherst) has been poor, and the season is now about over."

MACKEREL FISHERY.

The mackerel reappeared this summer in larger schools than for many years past in the Bay des Chaleurs and Gaspé Bay, but of a small size. The residents on the shores have been able to obtain a large sup-

ply of them, the principal part of which they dispose of fresh at the rate of \$1.75 per 200 pounds.

SALMON FISHERY.

The salmon fishery has proved a failure both on the north and south shores of the Saint Lawrence. The owners of the gill-nets in the bay and rivers generally feel the loss severely. The usual number of anglers from the United States appeared on the scene to fish the three rivers in this vicinity, but unfortunately had but little satisfaction in casting their flies.

The impression prevails that the failure of the salmon fishery may be attributed to the unusually large quantity of ice remaining in the Gulf late in the spring. The angling on the five rivers near here this summer appears to have been—

	No. of salmon.
Pabos, 2 rods.....	6
Grand River, 4 rods.....	25
York, 4 rods.....	10
Saint John, 2 rods.....	23
Dartmouth, 3 rods.....	13

WHALING

has proved so unremunerative a pursuit for a number of years past that there remains but one small vessel employed in that business. The voyage occupies the summer months, and generally is in the vicinity of the Straits of Belle Isle. About 9,000 gallons of oil, a few hundred-weight of small whalebone, and a few barrels of whale meat were the product of this summer's cruise. Price of oil, 45 cents per gallon; whalebone (small), \$10 per cwt.

HUNTING.

Last winter cariboo deer were found in large herds on the hills, about sixty miles distant, and a great many of them were killed by sportsmen and professional hunters. Two gentlemen camped in the hills for about six weeks and scored over fifty, the greater portion of which they had brought out on sleds, with dogs, and distributed.

The professional hunters sell their venison at 10 cents per pound. They also trap fur animals for the value of the skins, such as bear, beaver, otter, lynx, mink, fox; a silver-gray fox skin selling here at \$40.

CLIMATE.

During the summer months the weather is generally very fine—cool and invigorating—and well calculated to recuperate the health of persons in need of a change to such an atmosphere. Good health prevails on the coast. There is no record of the death-rate, but it may be considered very small; though such visitants as diphtheria and measles have appeared, at intervals of years, and proved as fatal as elsewhere.

SUBMARINE CABLES

are now being laid to connect the Magdalen Islands and Anticosti with the mainland (the latter's wires to connect with the operator's office at Gaspé), bringing these notable places of shipwrecks into the circuit of the world's wires.

The importance of this enterprise cannot be overestimated in its bearing upon the means of succoring vessels in distress, and the speedy transmission of marine intelligence in the Gulf, as well as in the benefit it may be made to afford American fishermen in quest of mackerel off the shores, by arranging to obtain from consuls, or otherwise, reports by telegraph of the fish-schooling, and thereby enabling them to save the valuable time lost in cruising off the track.

NORWEGIAN COD AND HERRING FISHERIES.

As pertinent to this subject, and interesting to American fishermen, the following extract from the report of Her Majesty's consular officer at Christiania on the cod and herring fisheries of Norway, for the year 1876, may be acceptable:

The population directly and indirectly interested in the fisheries is probably not less than 150,000, and the fishermen actually engaged in them at one time not less than 60,000. These latter move to and fro with their boats along the coast, according to the reports they hear of the so-called "sights," i. e., straw herring, sea birds, whales, &c.; and formerly (before the telegraph was impressed into their service) the inability to test the accuracy of the reports, and the great distance they had to traverse before reaching the neighborhood of the shoals, were the cause of endless disappointments and failures, and the catch was frequently lost for the want of hands to capture fish. This is now all changed as far as the herring fishery is concerned. Telegraphic stations are now erected, or are in course of erection, at the principal points along the coast, and the inspectors cause daily notices of the appearance and position of the shoals to be posted up at each station, and keep up constant communication with all these stations now in operation. "Field" telegraphs are kept in readiness to join on to the main line, and thus the slightest movements of the shoals are carefully watched and communicated, and it is a curious sight to witness the sudden exodus of thousands of fishermen, with their train of buyers, salters, &c., with boats, barrels, and appliances hastening to a distant place at the call of the wire. The men seem to prize highly this valuable coadjutor, and when the catch is chiefly attributable to its agency, they call the fish "telegraph herrings." The inspectors, likewise, every morning post up at the different stations a statement of the quantities fished, and quotations of prices paid per barrel, which they continue to do until the spawning time is past, which is indicated by the milky appearance of the water.

Although the herring is fished during three months, the chief fishings only extend over about six weeks, during which from 10,000 to 20,000 tons are taken weekly.

The benefit likely to accrue from the use of the telegraph is incalculable, for it is not only likely to increase the yield of the great annual cod and herring fisheries, but it will enable the scattered dwellers along the coast and on the shores of the large Fjord to assemble at given spots during other seasons of the year, and to prosecute with advantage the minor but numerous other fisheries of the country, especially that of the fat and much-esteemed summer herring, which, in plumpness and delicacy of flavor, fully competes with the Dutch or "North herring."

AGRICULTURAL.

The small lots of land under cultivation at this place could only by a stretch of the imagination be designated as farms; and the people being generally employed in the fishery establishments, the produce raised from the soil is principally hay, potatoes, turnips, and kitchen vegetables, barely sufficient for their own consumption—almost all else for subsistence in that line having to be procured from the cities. The cost of living is therefore high, and out of proportion to the returns for labor, &c.—men receiving for their day's work 80 cents; hours from five o'clock a. m. to 7 o'clock p. m.

NAVIGATION.

The last vessels leave here about the end of November, and the first make an entrance to the port about the middle of May, upon the de-

parture of the ice, which has sealed up the bay during the interval. While the navigation is open steamships making trips between Quebec and Pictou touch here, en route, both ways. Another steamer runs between this port and Campbellton, N. B.; and another visits this port once a month from the Magdalen Islands.

The nearest railway station is at Campbellton, N. B.; about 180 miles distant, on the Intercolonial Railroad, running between Halifax and Quebec.

The statement of shipping, &c., appended, is from the custom-house.
GEO. H. HOLT, *Consul*.

UNITED STATES CONSULATE,

Gaspé Basin, October 1, 1880.

Number and tonnage of vessels, with values and description of imports and exports, port of Gaspé, for year ending June 30, 1880.

Inward:	
Number of vessels	38
Tons	7,856
Men	276
Cottons	value.. \$4,011
Iron manufactures	do... 1,023
Sugar	pounds.. 34,000
Sugar	value.. \$1,267
Molasses	gallons.. 16,000
Molasses	value.. \$3,150
Tea	pounds.. 10,000
Tea	value.. \$2,140
Woolens	do... 1,634
Fishing gear	do... 12,800
All other	5,015
Outward:	
Number of vessels	40
Tons	7,596
Men	306
Fish	value.. \$347,137
Timber and lumber	do... 34,969
Other	do... 269
Coasting trade:	
Arrived:	
Number of vessels	252
Tons	40,907
Men	2,710
Departed:	
Number of vessels	253
Tons	42,841
Men	2,772

THE FISHERIES OF CANADA.

REPORT BY CONSUL-GENERAL JACKSON, OF HALIFAX, ON THE FISHERIES OF CANADA, AND THEIR VALUE TO THE UNITED STATES.

A reference to the statistics of this report shows the value of the fish and fish products of the Dominion of Canada for the last ten years, extending from 1870 to 1879. They are officially said to be based on departmental fishery reports for the respective years. According to the statements furnished, the value of the fisheries of the Dominion in 1879 is exactly double that for 1870. The tabulated statement which I have given is taken from the report of Mr. W. F. Whitther, commissioner of

fisheries for the year 1877. The said report appears in vol. 11, No. 3, of the Sessional Papers of 1878. Now, in making up the said table of the aggregate quantities and values of fish, the produce of the Canadian fisheries in the Provinces of Nova Scotia, New Brunswick, Quebec, and Ontario, from 1869 to 1877, and Prince Edward Island, since its entry into confederation, he specifies the quantity caught in the various years of about *sixty* different kinds of fish and fish products, including the river fisheries. It will be seen that the salmon has been valued in the aggregate at \$4,500,000, trout at \$881,000, lobster at \$8,000,000, fish-oils at \$2,000,000, alewives at \$1,000,000, and shad at \$710,000. These specimens are given as indicating the way in which the aggregate value of the Dominion fisheries is made up.

By a table furnished, the total exports of fish and fish products of the Dominion from 1870 to 1879 are exhibited. It will be observed that the total exports for that period constitute exactly one-half of the whole, the figures being, total value, \$105,815,668; exports, \$52,753,654; the total exports to the United States of fish and fish products for the same period, in ten years, were, in value, \$14,258,329.

THE MACKEREL FISHERY.

I come now to the mackerel fishery of the Dominion, which demands special attention as being that which is of very considerable value to the United States. I may remark that there is a most material discrepancy as to the entire value of the Dominion mackerel fishery of 1871, as set forth in the annual report of the minister of marine and fisheries for the year 1872 (see Sessional Papers, vol. 6, No. 4, 1873), and a statement containing a table furnished by Mr. Whitchee, the fishery commissioner, in his report for the year ending December 31, 1877. (See Sessional Papers, vol. 11, No. 3, 1878.) In the minister's report the total value of the mackerel fishery for 1871 is given as \$2,870,807, while in Whitchee's report the total value for the same year is given as \$1,353,306, making a difference in value of \$1,517,501. In the estimate which follows Whitchee's value is taken as being evidently the more correct, the minister's estimate for that year being about \$1,000,000 in excess of the produce of any year between 1869 and 1879.

It will be seen that the entire value of the mackerel fishery of the Dominion of Canada from 1870 to 1879 was estimated at \$14,659,081. A detailed statement is presented showing the value in each year from 1870 to 1879 of the mackerel fishery of the maritime provinces respectively, which on comparison I find corresponds substantially in the total result with that furnished by Mr. Whitchee in his report dated December 31, 1877. (See Sessional Papers No. 3, 1878.)

The next topic of interest in connection with the mackerel fishery is the value of the total exports of mackerel from the Dominion of Canada for the years 1873 to 1879, as compared with the exports to the United States for the same period. These are given in the annexed returns, the yearly value of the quantity for each province being specified. The value of the total exports from 1873 to 1879 was \$5,451,663, the value of the exports of mackerel to the United States for the same period being \$4,074,699.

These figures show that of all the mackerel exported by the Dominion from 1873 to 1879 the United States took over three-fourths.

It will be observed by a comparison of the total value of the fish and fish products of the Dominion for the years 1870 to 1879 with the entire value of the mackerel fishery for the same period, that the mackerel

bears only in point of value to the former a proportion less than one-seventh, the figures being \$105,315,688 to \$14,659,081.

There appears to be a radical error in the estimates of the Dominion officials as to the aggregate value of the fisheries of the Dominion. The total value of the mackerel fisheries of the Dominion from 1873 to 1879 will be found, according to Mr. Whiteher, to be \$10,543,975. The total value of the exports of mackerel from the Dominion for the same period is given in the customs returns, of which particulars are annexed to this report, as \$5,559,227. This assumes that about one-half of the mackerel caught in Dominion waters, as compared with the quantity exported to other countries, is consumed in the Dominion.

Now it will be seen by reference to the statistics furnished that of the total value of the exports of mackerel from the Dominion from 1873 to 1879, namely, \$5,451,663, Nova Scotia alone exported mackerel to the value of \$4,149,051. The principal dealers here, whose experience is based on such large transactions in mackerel, explicitly and unanimously affirmed that the consumption of pickled mackerel in the Dominion is, as compared with the quantity exported, merely fractional. The number of barrels sent from the maritime to the upper provinces is not one in twenty of the quantity exported. In view of these facts the conclusion is irresistible, either that the Canadian consumption is extraordinarily large, or that the reported total catch is greatly overestimated.

These statistics further show that in the year 1879, in which the largest total catch of fish ever made in the Dominion in any one year was reported, there was the smallest number, for many years, of American vessels engaged in the fisheries of the Gulf of Saint Lawrence. The fact as to the small number of American vessels employed in the gulf fishery is brought out in the admirable report of Messrs. Fitz J. Babson and Alfred Dwight Foster, who were last year commissioned by the Department of State to examine as to the condition and conduct of the United States fishing interests in the waters of the British North American provinces.

While, therefore, in that year the few Americans who engaged in the prosecution of the British North American inshore fisheries lost money, Canada saved, under the operation of the treaty, by the remission of duties on fish and the products of fish exported to the United States, not less than \$350,000.

It is apparent, then, that the fishery statistics of the Dominion, while they show the benefits to the fishery industry of Canada of free American markets, afford no evidence of any importance as to the value of the treaty concessions made by Great Britain to the United States respecting the colonial inshore fisheries.

The indications now are that the prosecution of these fisheries having ceased to be profitable to the American fishermen, they will be compelled to abandon them and hereafter to pursue their hazardous calling on our own coasts and shores, and on the banks of Newfoundland, which latter fishery is the only one in foreign waters which affords remunerative employment to the fishermen of the United States.

MORTIMER M. JACKSON,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Halifax, N. S., November 17, 1880.

STATISTICS OF THE FISHERIES OF THE MARITIME PROVINCES OF THE DOMINION OF CANADA.

The minister of marine and fisheries estimates the value of the fisheries of Canada at \$13,500,000 in 1879, the official figures for the preceding year amounting to \$13,215,678.

The value of the fish exported during the fiscal year ending June 30, 1879, was \$7,072,203, against \$6,929,366 in 1878, being an increase of \$142,837.

During the fiscal year 1879 the exports of fish from the Dominion of Canada to the United States amounted in value to \$2,001,679.

The quantity sent in the same year to Great Britain amounted in value to \$1,535,237.

Total exports of fish to other countries, \$5,070,524; total exports to the United States, \$2,001,679.

The total value of the pickled mackerel exported by the Dominion of Canada in 1879 was \$809,304, of which the United States took \$563,158 worth.

The total exports of fresh salmon in 1879 by the Dominion were, in value, \$229,862, of which the United States took \$228,425; all other fresh fish exported was to the United States, of which the value was \$133,206.

Statement showing the value of the fish and fish products of the Dominion of Canada for the years 1870 to 1879, inclusive.

[Compiled from departmental fishery reports.]

	Total value.
1870	\$6,577,391
1871	7,573,199
1872	9,570,116
1873	10,754,402
1874	11,681,886
1875	10,350,385
1876	11,012,302
1877	11,422,501
1878	13,373,486
1879	13,500,000
Total value	105,815,668

Statement showing the value of the total exports of the fish and produce of the fisheries of the Dominion of Canada from 1870 to 1879, inclusive.

	Value of exports.
1870	\$3,608,549
1871	3,994,275
1872	4,348,508
1873	4,779,277
1874	5,292,368
1875	5,380,527
1876	5,501,221
1877	5,847,360
1878	6,929,366
1879	7,072,203
Total value	52,753,654

Statement showing the value of the exports of fish and fish produce from the Dominion of Canada to the United States during the following years:

Exports in 1870:	Value.
Ontario	\$84,976
Quebec	51,033
Nova Scotia	568,933
New Brunswick	237,959
Total in 1870	942,901

Exports in 1871:	Value.
Ontario	\$109,150
Quebec	17,652
Nova Scotia	465,515
New Brunswick	224,739
Total in 1871	817,065
Exports in 1872:	
Ontario	\$59,911
Quebec	38,636
Nova Scotia	584,514
New Brunswick	157,232
Total in 1872	840,293
Exports in 1873:	
Ontario	\$95,295
Quebec	36,921
Nova Scotia	993,036
New Brunswick	207,382
British Columbia	3,764
Total in 1873	1,336,398
Exports in 1874:	
Ontario	\$78,567
Quebec	54,361
Nova Scotia	1,143,870
New Brunswick	229,091
British Columbia	4,368
Prince Edward Island	106,376
Total in 1874	1,616,663
Exports in 1875:	
Ontario	\$94,838
Quebec	102,249
Nova Scotia	892,010
New Brunswick	276,275
Prince Edward Island	272,340
British Columbia	7,116
Manitoba	737
Total in 1875	1,645,565
Exports in 1876:	
Ontario	\$85,323
Quebec	70,903
Nova Scotia	877,693
New Brunswick	283,646
Prince Edward Island	138,064
British Columbia	19,681
Manitoba	20
Total in 1876	1,475,330
Exports in 1877:	
Ontario	\$85,331
Quebec	68,073
Nova Scotia	715,958
New Brunswick	300,944
Prince Edward Island	130,558
British Columbia	17,053
Manitoba	
Total in 1877	1,317,917
Exports in 1878:	
Ontario	\$90,613
Quebec	74,160

Exports in 1878—Continued.

Nova Scotia	1,073,449
New Brunswick	603,536
Prince Edward Island	314,136
British Columbia	211,113

Total in 1878..... 2,367,007

Exports in 1879:

Ontario	\$94,325
Quebec	58,614
Nova Scotia	909,020
New Brunswick	486,555
Prince Edward Island	188,791
British Columbia	161,876
Manitoba	9

Total in 1879..... 1,809,190

Grand total from 1870 to 1879..... 14,258,329

Statement showing the total value of the mackerel fisheries of the Dominion of Canada in 1870, 1871, and 1872, according to the report of the minister of marine and fisheries.

NOVA SCOTIA.		Value.
1870. Mackerel, 85,954 barrels		\$1,023,048
1871. Mackerel		1,353,306
1872. Mackerel, 115,833 barrels		1,624,894

QUEBEC.		
1870. Mackerel, 3,677 barrels		\$36,770
1871. Mackerel, 7,638 barrels		76,380
1872. Mackerel, 1,760 barrels		17,590

NEW BRUNSWICK.		
1870. Mackerel, 3,282 barrels		\$39,384
1871. Mackerel, 4,636 barrels		56,603
1872. Mackerel, 2,217 barrels		32,720

Statement showing the value of mackerel fisheries of the Dominion of Canada in the following years, as estimated by W. F. Whitaker, commissioner of fisheries.

QUEBEC.		
1873. Mackerel, 6,170 barrels		\$61,700

NOVA SCOTIA.		
1873. Mackerel, 141,005 barrels		\$1,410,050
Mackerel, 10,842 boxes		1,626
Total		1,411,676

NEW BRUNSWICK.		
1873. Mackerel, 3,229 barrels		\$39,290
Mackerel, 21,060 cans		3,157
Total		42,447

QUEBEC.		
1874. Mackerel, 7,278 barrels		\$72,780

NOVA SCOTIA.		
1874. Mackerel, 122,258 barrels		\$1,222,580
Mackerel, 80,460 cans		12,069
Total		1,234,649

MACKEREL YIELD OF CANADA.

53

NEW BRUNSWICK.

1874. Mackerel, 4,243 barrels	\$42, 430
Mackerel, 59,100 cans.....	8, 850
Total.....	<u>51, 280</u>

PRINCE EDWARD ISLAND.

1874. Mackerel, 27,317 barrels	\$221, 761
1875. Cannot find data for provincial returns, but the aggregate quantity and value for 1875 are—	
Mackerel, 123,654 barrels	1, 236, 545
Mackerel, 39,980 pounds.....	5, 917
Mackerel, 21,480 cans.....	3, 210
Total.....	<u>1, 245, 752</u>

NOVA SCOTIA.

1867. Mackerel, 70,964 barrels	\$709, 640
Mackerel, 30,820 cans.....	4, 623
Total.....	<u>714, 263</u>

NEW BRUNSWICK.

1876. Mackerel, 3,034 barrels.....	\$30, 340
Mackerel, 1,800 cans.....	270
Total.....	<u>30, 610</u>

QUEBEC.

1876. Mackerel, 4,975 barrels.....	\$49, 750
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PRINCE EDWARD ISLAND.

1876. Mackerel, 25,383 barrels.....	\$203, 064
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NOVA SCOTIA.

1877. Mackerel, 113,638½ barrels.....	\$1, 136, 385
Mackerel, 125,036 cans	18, 755
Total.....	<u>1, 155, 140</u>

NEW BRUNSWICK.

1877. Mackerel, 4,472 barrels.....	\$44, 720
Mackerel, 65,040 cans	9, 756
Total.....	<u>54, 476</u>

QUEBEC.

1877. Mackerel, preserved in cans, 960 pounds	\$144
Mackerel, 5,343½ barrels.....	53, 435
Total.....	<u>53, 579</u>

PRINCE EDWARD ISLAND.

1877. Mackerel, 40,462 barrels.....	\$404, 620
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NOVA SCOTIA.

1878. Mackerel, 129,608 barrels.....	\$1, 296, 980
Mackerel, 70,875 cans	10, 631
Total.....	<u>1, 307, 611</u>

NEW BRUNSWICK.

1878. Mackerel, 9,080 barrels.....	\$30,800
Mackerel, 43,814 cans	6,572
Total.....	97,372

QUEBEC.

1878. Mackerel, 8,659 barrels.....	\$86,590
Mackerel, 5,136 cans	770
Total.....	87,360

PRINCE EDWARD ISLAND.

1878. Mackerel, 36,482 barrels.....	\$291,856
Mackerel, preserved, 1,200 pounds.....	120
Total.....	291,976

NOVA SCOTIA.

1879. Mackerel, 101,539 barrels.....	\$1,015,590
Mackerel, 27,000 cans.....	4,050
Total.....	1,019,640

NEW BRUNSWICK.

1879. Mackerel, 10,880 barrels.....	\$108,800
Mackerel, 39,176 cans	6,876
Total.....	114,676

QUEBEC.

1879. Mackerel, 7,552½ barrels	\$60,420
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PRINCE EDWARD ISLAND.

1879. Mackerel, 70,085 barrels.....	\$560,680
Mackerel, 27,338 cans	2,733
Total.....	563,413

Statement showing the value of the exports of mackerel from the Dominion of Canada to the United States for the following years :

NOVA SCOTIA.

	Value.
1873. Mackerel, 77,420 barrels	\$502,226
1874. Mackerel, 58,385 barrels	516,120
Mackerel, fresh, 26,390 pounds	2,689
Total for 1874	518,809
1875. Mackerel, 35,568 barrels	242,578
Mackerel, fresh, 1,008 pounds.....	126
Total for 1875	242,704
1876. Mackerel, 49,407 barrels	410,511
Mackerel, fresh, 22,760 pounds	4,632
Total for 1876	415,143
1877. Mackerel, 27,285 barrels.....	215,119
Mackerel, preserved, 8,976 pounds.....	1,051
Total for 1877	216,170

1878. Mackerel, 61,812 barrels	\$473, 018
Mackerel, preserved, 43,656 pounds	4, 287
Mackerel, fresh, 54,200 pounds	1, 206
Total for 1878	478, 511
1879. Mackerel, 65,949 barrels	402, 574
Mackerel, preserved, 266 barrels	813
Mackerel, fresh, 39,700 pounds	2, 632
Total for 1879	406, 021
Total for Nova Scotia, 1873 to 1879	2, 779, 647

QUEBEC.

1873. Mackerel, 106 barrels	\$940
1874. Mackerel, 164 barrels	984
1875. Mackerel, 146 barrels	860
1876. Mackerel, preserved, 36 barrels	206
1877. Mackerel, 3 barrels	21
1878. Mackerel, fresh, 10,738 pounds	654
Mackerel, pickled, 71 barrels	434
Total for 1878	1, 088
1879. Mackerel, 228 barrels	1, 394
Total for Quebec, 1873 to 1879	5, 493

NEW BRUNSWICK.

1873. Mackerel, 1,276 barrels	\$10, 232
1874. Mackerel, 2,561 barrels	25, 123
1875. Mackerel, 3,375 barrels	28, 978
1876. Mackerel, 7,122 barrels	56, 274
1877. Mackerel, fresh, 703 pounds	62
Mackerel, pickled, 5,049 barrels	45, 961
Total for 1877	46, 023
1878. Mackerel, fresh, 87,883 pounds	5, 099
Mackerel, preserved, 9,448 pounds	693
Mackerel, pickled, 7,437 barrels	78, 890
Total for 1878	84, 682
1879. Mackerel, fresh, 52,786 pounds	2, 009
Mackerel, pickled, 9,952 barrels	81, 596
Total for New Brunswick, 1873 to 1879	334, 917

PRINCE EDWARD ISLAND.

1874. Mackerel, 6,583 barrels	73, 270
1875. Mackerel, 31,466 barrels	151, 232
1876. Mackerel, 13,276 barrels	108, 332
1877. Mackerel, 10,867 barrels	97, 350
1878. Mackerel, 31,702 barrels	279, 402
1879. Mackerel, 18,526 barrels	145, 038
Total for Prince Edward Island, 1874 to 1879	954, 642

Summary statement showing the value of the exports of mackerel from the Dominion of Canada to the United States for the years 1873 to 1879.

Quebec.		Prince Edward Island.		Nova Scotia.		New Brunswick.		Total value.
Years.	Value.	Years.	Value.	Years.	Value.	Years.	Value.	
1873.....	\$940	1873.....		1873.....	\$502, 226	1873.....	\$10, 232	
1874.....	984	1874.....	\$73, 279	1874.....	518, 809	1874.....	25, 123	
1875.....	860	1875.....	251, 232	1875.....	242, 704	1875.....	28, 978	
1876.....	206	1876.....	108, 332	1876.....	415, 143	1876.....	56, 274	
1877.....	21	1877.....	97, 359	1877.....	216, 170	1877.....	46, 023	
1878.....	1, 088	1878.....	279, 402	1878.....	478, 571	1878.....	84, 682	
1879.....	1, 394	1879.....	145, 038	1879.....	406, 024	1879.....	83, 605	
	5, 493		954, 642		2, 779, 647		334, 917	\$4, 074, 699

The following statement shows the values of some of the kinds of fish and fish products that go to make up the estimated aggregate value of the fisheries of the Dominion of Canada, by the minister of marine and fisheries, and Mr. Whitchee, the commissioner of fisheries, for the years 1869 to 1873, inclusive:

Description.	1869.	1870.	1871.	1872.	1873.
Haddock.....			\$4, 500	\$4, 800	\$113, 563
Halibut.....					33, 746
Pollack.....	cwt.	\$26, 301	\$1, 690	3, 150	59, 738
Pollack.....	qtls.				72, 297
Hake.....	cwt.	4, 985	990	60, 540	112, 326
Hake.....	qtls.				207, 642
Salmon.....	816, 610	463, 487	408, 077	410, 645	802, 857
Alewives.....	31, 056	137, 347	84, 702	104, 124	149, 754
Shad.....	24, 059	99, 816	54, 959	57, 500	62, 083
Scale fish.....	149, 264	322, 795	343, 965		
Oysters.....	1, 800	126, 000	39, 450	74, 460	81, 864
Whitefish.....	95, 340	104, 814	93, 219	143, 520	131, 624
Lobsters.....	15, 275	92, 575	282, 500	882, 633	1, 213, 749
Cod oil.....	51, 509	59, 546	80, 027	68, 264	45, 813
Fish oil.....	21, 751	131, 771	251, 490	322, 487	340, 171

The subjoined statement shows the aggregate values of some of the fish and fish products that go to make up the estimate of the value of the Dominion fisheries made by the minister of marine and fisheries, and Mr. Whitchee, the commissioner of fisheries, for the years 1869 to 1877; inclusive (nine years):

	Aggregate value.
Haddock.....	\$2, 069, 516
Halibut.....	311, 606
Pollack.....	968, 382
Hake.....	1, 633, 001
Salmon.....	4, 554, 154
Alewives.....	1, 027, 822
Shad.....	710, 533
Scale fish.....	817, 024
Oysters.....	540, 725
Trout.....	881, 413
Whitefish.....	1, 507, 755
Lobsters.....	8, 151, 741
Cod oil.....	582, 449
Fish oil.....	2, 153, 066

The following statement exhibits the aggregate value of the mackerel fishery of the Dominion of Canada from 1870 to 1879, inclusive, and of

Prince Edward Island since its entry into the Dominion in 1873, as estimated by Mr. Whitcher, the fishery commissioner :

1870.....	\$1,092,638
1871.....	1,353,316
1872.....	1,669,152
1873.....	1,508,783
1874.....	1,580,470
1875.....	1,245,752
1876.....	997,687
1877.....	1,667,815
1878.....	1,784,319
1879.....	1,759,149

Total value..... 14,659,081

Value of returns from 1873 to 1879..... 10,543,975

Statement showing the total value of the exports of mackerel from the Dominion of Canada for the years 1873 to 1879, inclusive.

For the year 1873 :

Quebec.....	\$2,076	
Nova Scotia.....	673,894	
New Brunswick.....	10,232	
		\$686,202

For the year 1874 :

Quebec.....	984	
Nova Scotia.....	615,992	
New Brunswick.....	25,123	
Prince Edward Island.....	73,329	
		715,428

For the year 1875 :

Quebec.....	953	
Nova Scotia.....	509,117	
New Brunswick.....	30,338	
Prince Edward Island.....	252,839	
		790,247

For the year 1876 :

Quebec.....	206	
Nova Scotia.....	582,155	
New Brunswick.....	56,979	
Prince Edward Island.....	108,332	
		747,672

For the year 1877 :

Quebec.....	65	
Nova Scotia.....	442,306	
New Brunswick.....	46,179	
Prince Edward Island.....	98,383	
		586,933

For the year 1878 :

Quebec.....	1,078	
Nova Scotia.....	677,550	
New Brunswick.....	85,239	
Prince Edward Island.....	279,568	
		1,043,435

For the year 1879 :

Quebec.....	1,665	
Nova Scotia.....	651,037	
New Brunswick.....	83,946	
Prince Edward Island.....	145,098	
		881,746

Total value..... 5,451,663

TRADE OF NOVA SCOTIA WITH THE UNITED STATES.

REPORT BY CONSUL HOBART, OF WINDSOR.

There has been a marked improvement in the trade of this consular district since my last report.

Gypsum.—This trade has materially increased; very much more has been shipped this year than for the corresponding time last year. This increased demand is owing to the revival of business in the United States, especially in white gypsum for calcimining, and no doubt the trade will still further improve in proportion to the demand in the United States.

The rate of freight here has ranged from \$1.75 to \$2 per ton to ports in the United States, an increase of more than 25 per cent. over that of last year. Much larger vessels are being employed in the trade than heretofore, many of them having a carrying capacity of from eight to ten hundred tons. American tonnage is largely employed, and will continue to be in the future.

Trade generally with the United States has exceeded that of the past year, owing to the improvement of business in the United States, consequently an advance in prices, notwithstanding the high rate of duties on most of the products of the country.

The advance in prices and demand for products are inducements to ship to the United States. Should times continue to improve, we may reasonably look forward to larger exports, and more extensive imports also.

Crops.—For the season just closed the crops have as a whole been very satisfactory except that of hay. Fruit of various kinds has been raised in abundance, particularly apples, which have been selling from \$1 to \$1.50 per barrel. Large shipments are being made to Europe and other foreign markets.

The hay crop is light—far below the average yield; prices about \$12 per ton—an increase of \$4 per ton over last year's sales. On the whole, farmers have reason to be satisfied with the results of their labor.

Cattle exports.—Of late there has been quite a demand for cattle, which have been purchased and shipped alive to England. This trade seems to be on the increase and promises to absorb the surplus stock raised in the country.

Ship-building.—Ship-building has undergone no great change during the past year. There is a steady business being done in that line by men of capital, who own and control their ships when built; there is no speculative demand for ships, consequently no change in the cost of construction. The shipping interest of Nova Scotia is one of the greatest importance, and the rise or fall of freight in New York, Baltimore, and other ports in the United States, affect materially the large interest of ship-owners in this province, as their ships are mostly engaged in the foreign trade from ports in the United States.

Coal.—This trade remains about the same, no change in prices at the mines. Any advance in prices in ports of delivery may be attributed to the increased rates of freight from last year. The importation of anthracite coal (notwithstanding the duty and the increased price in the United States market) has been fully equal to last year.

Lumber.—This branch of industry has much improved within the last year, and very much better prices have been realized; large shipments have been made to Europe and the United States at an advance of at least 50 per cent. over that of last year.

Emigration.—The demand for labor in the United States has induced a continuation of the large emigration from this province commenced last year, and many localities have lost a large percentage of their young men and women. Wages here average \$1 per day for common laborers and \$1.50 to \$2.00 for skilled labor.

This province offers great inducement to capitalists in its mines, in its fisheries, in its lumber, and in its agriculture and its manufacturing facilities. It abounds in fine harbors, excellent water-powers, immense dike lands, extensive forests of lumber, and mineral wealth of untold value, now but partially developed.

D. K. HOBART,
Consul.

UNITED STATES CONSULATE,
Windsor, Nova Scotia, November 20, 1880.

THE SONORA RAILROAD.

REPORT BY CONSUL WILLARD, OF GUAYMAS, MEXICO.

I have the honor to inform you that the political condition of this consular district is tranquil. The attempted revolutionary movement of E. General Marquez was a complete failure, and he has abandoned Sonora and is reported as having arrived at San Francisco.

Work on the Sonora Railroad is progressing favorably; about 400 laborers and a large and efficient staff of engineers, surveyors, foremen, &c., are employed. The employment of so small a number of laborers arises from the limited space on which work can at present be carried on. The principal difficulties are met with in the first four miles of the line, where a wharf, two bridges, and two tunnels have to be constructed, and considerable embankment and filling along the sea-shore. When this portion is completed, work can be rapidly advanced in the open country, where a greatly increased working force can be employed, and the line completed and opened as far as Hermosillo by the 1st of next March, as contemplated by the railway company.

The Guaymas terminus of the line is on the island of Ardilla, well inside the entrance of the harbor. This spot has been selected as offering the best facility and security for the erection of a ship and steamer wharf, serving as a basis of supply of material for construction of the line. This wharf will connect with the mainland by a pile bridge, from whence the road follows the shore line (with the exception of two tunnels of about 1,000 feet) for over three miles; it there crosses an arm of the bay on a pile bridge of considerable length and arrives in open country, presenting few difficulties and light grades, where the work can be advanced rapidly.

Bridge and wharf timber is now due from Oregon; 1,800 tons of steel rails, some cars, and locomotives are on the way from Europe and will be due about the 1st of September. The company has perfected arrangements by which a constant monthly supply of all needful material has been secured from the United States and Europe.

As far as the company's agent and the constructing engineer have observed, they anticipate no difficulty in obtaining an abundant supply

of labor, consisting principally of Yaqui Indians. Other tribes of industrious Indians in the more remote parts of the State will seek work as the road advances in the interior. Should there occur, contrary to expectation, a failure of the needful supply, Chinamen will be imported, but this the company would avoid if possible.

The enterprise has so far been cordially supported by the State and municipal authorities and the good will of the people of the State, who fully anticipate that the opening of the railway will inaugurate a new era of prosperity in Sonora, and will do much to insure peace by opening to the inhabitants new avenues of employment and enterprise, which will render revolutions (heretofore so frequent) less probable.

That mining enterprise will be greatly stimulated is evident from the fact that in view of the prospective opening of the railway numerous parties, including mining experts, have within the last few months visited the various mining districts of the State in the interests of capitalists from various parts of the United States, and several purchases are in contemplation. Many inquiries for agricultural lands have also been made, all tending to show what hopes are entertained in the event of a successful issue of the railway enterprise.

A. WILLARD,
Consul.

UNITED STATES CONSULATE,
Guaymas, July 8, 1880.

COMMERCE OF MEXICO, AND OUR SHARE THEREIN.

REPORT BY CONSUL SUTTON, OF MATAMOROS.

OUR PRESENT AND FUTURE TRADE WITH MEXICO.

The mutual commercial relations of two nations so situated as are the United States and Mexico are not only of great present importance, but are destined to soon far exceed their present limit.

The rapid increase in population in the States and Territories of the United States lying along this frontier, aided by the development of the railway system connecting with Mexican railways leading to the interior, make it seem not improbable that the present international land traffic may double or quadruple within the next decade.

The traffic by water from New York, New Orleans, and San Francisco will also largely increase.

The manufacturing interests of the United States are seeking a market in nearly every quarter of the world, and, considering its location and commercial requirements, none is more worthy of careful and intelligent information than Mexico.

HOW TO INCREASE OUR TRADE WITH MEXICO.

The various consular reports have fully shown the manner of carrying on this trade, and how it can be gained and controlled, so far as mere writing can show. It only remains for the merchant who desires to compete for this trade to go about the business with care and patience. Nothing can be well done in haste or without labor, and in no country is this more true than in Mexico. In those places where American goods are already sold the sale can be continued and increased. There are many places which American goods have not yet reached, or where they are not handled with a view to their increased sale.

If the American merchant is desirous to enter into the trade it is necessary that the work shall be carefully studied, and then pushed steadily. As has been many times stated by the consular reports, it may be generally considered that the best way is to establish either a branch house or an agency.

All things considered, the first plan may be given the preference. This involves a good capital, long credits, and efficient managers at both ends of the partnership. The manager of the branch house must be able to study the market, the customers, and the import laws with care and patience not needed in the United States. He must be able to use his eyes and ears and control his tongue; must not only be honest and of good habits, but must have these qualities in a marked degree to withstand the peculiar temptations of the country.

In this regard the Europeans seem to have an advantage over Americans. The former can be mildly wicked on any or all three of the principal vices—drink, women, and gambling—and still not lose their heads. The latter, in too many instances, when once started, seem to go headlong, and only stop in utter ruin.

In the starting of branch houses or agencies it will be found necessary that the local house select or determine the goods to be sent out, and that such must be filled exactly. The indifference of some American houses in filling orders for Mexican purchasers has been prejudicial to the interests of the purchaser and, of course, to an increase of trade. To illustrate: in an order given for prints, or goods of certain width, the American house does not seem to realize, or to care, that a small deviation from the width in the invoice or import declaration will not only make very heavy fines and vexatious delays, but subject the really innocent importer to imprisonment.

AMERICAN IMPATIENCE FOR IMMEDIATE RESULTS.

I have noted above that this work must be studied carefully and then pushed steadily. I may be mistaken, but from my observation and experience I have been led to believe that at least some few American dealers have spells of enthusiasm and relapses of indifference regarding the export trade to Mexico. In their time of enthusiasm they send circulars, circular letters, and even individual letters to every consular officer or other person whose address they may have in the section in which they wish to operate. They usually desire immediate and full replies to several queries, but omit to inclose return stamps. Many private persons would hardly feel like taking a great deal of pains to answer all such letters.

The replies to these letters come in slowly. Many of the recipients may be busy for two weeks and then use two weeks more to get all the information desired. The two letters may easily use up a month or more *en route*, and it is thus from two to three months before they are all in and a careful study of them can be made. Long before this the inquiring house has got disgusted at the delays or difficulties in the way.

Other plans which seem to promise something immediate and tangible come up, and the replies, which have often been made from extreme courtesy, receive but scant consideration. The writers of these letters sometimes get tired of giving such information when it is unused, or even in some cases unacknowledged.

Whoever thinks of the Mexican trade should study it for some time and in all situations. Having once decided to undertake the work, calculate not only to spend money and time and talent, but to give infinite

care and patience in return for future profits. No one can be guaranteed success, but others, notably Germans and Spaniards, do succeed, and without doubt there is a fair chance of our doing as well as they if we give the same care and have the same amount of capital and credits.

I have spoken somewhat plainly as to efforts to increase trade, not only because I thought it applicable, but because I would rather say it than have it said by a consul for another country.

AMERICAN TRADE JOURNALS.

The trade journals which reach this office do a good work in the direction of trade increase, and I have thought that they might do good service by showing the weak spots which must be improved to enable our trade to reach its proper development.

LACK OF TRADE STATISTICS.

It is plain that to study the subject of Mexican trade, statistics, which will show for a series of years the routes, kinds, and values of the imports and exports, is a primary necessity. These statistics have not often been so kept as to make it possible to give reliable reports, and when kept at the various custom-houses have not been published with the regularity that is desirable. Besides this, the Spanish language is almost an unknown tongue in the United States, and anything published in Spanish is comparatively buried.

These causes, added to the ignorance of Mexico which prevails in the United States, have given credence to very exaggerated reports as to the wealth and commerce of the country. Mexico is a land of wonderful beauty and natural advantages. Perhaps the loveliest spots on the face of the earth may be found within her borders, and to the beauty of the landscape may be added climate and natural products as fine. Her mines of great known wealth have yet, according to rumor, marvelous unknown riches, and the number yet unworked is fabulous.

Such has been the effect of this ignorance, or this romance, or both together, that the actual facts and figures of the total Mexican commerce have been difficult things to determine.

ROMANCE *vs.* REALITY.

The letter of the Secretary of State, dated May 1, 1880, transmitting to Congress the report on commercial relations for the year 1879, speaks of this lack of detailed information. While the separate reports showed the commerce of the different ports, yet it was not possible to obtain therefrom a full and comprehensive view of the total from and to all countries. The letter of the Secretary mentions that the annual imports of Mexico from Europe alone had been stated by prominent individuals at \$70,000,000, and that while the Department of State had no reliable Mexican data at hand upon which to base a statement concerning the report made of that country, yet there was at hand sufficient European official returns to lead to the belief that such assertions were wild exaggerations, calculated to mislead our manufacturers and exporters who were trading, or might be inclined to open up trade, with the sister republic. He therefore considered it necessary to show that the total importations into Mexico did not amount to one-half of the reported trade from Europe alone. The estimate of the Secretary has been more than justified by Mexican official statistics published in the interim.

From the table given in the above-mentioned letter of the Secretary of State it is shown that the invoice value of the imports for the two years given averaged \$19,576,500. This invoice value is increased 50 per cent. by the Mexican officials, as noted in the table given—to make the *Plaza* value—but in later statistics this increase is 60 per cent. on the invoice value.

It is very plain, however, that the only proper basis for computation is the original invoice value. In this connection it must be noted that the invoice values are in Mexican eagle dollars, and that these dollars have a declared value in the United States of 90.9 cents. If we reduce the \$19,576,500, average annual imports for the two years given in the Secretary's letter, to United States gold, we find it amounts to only \$17,896,038. But while this computation is on the basis of 90.9 cents, the actual local market value of eagle dollars has been for some years not to exceed 85 cents, which would give an actual value in United States gold of \$16,640,025. We thus find that the extravagant estimate of \$70,000,000 of annual imports from Europe alone is brought down to an actual value in United States gold to less than one-fourth that from all countries.

CONTRABAND TRADE OF MEXICO.

On page 24 of the letter of the Secretary of State, previously quoted, the contraband trade is mentioned. I am not qualified to speak on this matter except as regards the frontier, from the mouth of the Rio Grande up river to the mouth of the Pecos. It is a business which does not readily resolve itself into statistical tables, and any estimates would necessarily have comparatively small value. I have, however, estimated the amount of goods smuggled from the United States into Mexico, in the range of territory named, as being about \$1,000,000, and that of eagle dollars smuggled out of Mexico in the same extent of territory as being \$1,500,000 per annum, giving a total contraband trade in these two classes of articles of, say, \$2,500,000 per annum.

However correct this estimate may be, its nature and variableness put it outside of legitimate business calculations.

In the letter of the Hon. John W. Foster, late minister of the United States to Mexico, to Mr. Carlisle Mason, president of the Manufacturers' Association, Chicago, Illinois, sent through the Department of State and dated October 9th, 1878, is given a full review of the subject of Mexican trade.

In that letter, page 30, the total annual exports are given at \$28,772,194 (probably in eagle dollars), with an estimated population of 9,000,000, or \$3.19 per capita. The average annual exports, as shown by the tables herewith sent, are \$28,867,167 (eagles), which show that the average exports for a number of years have not reached \$29,000,000 per annum. Of course a reduction to United States gold at 90.9 cents would decrease its value, and reduced at 85 cents, its actual value during the years under consideration, would make it still smaller.

The letter of Mr. Foster, above referred to, is a most valuable and intelligent statement of the subject, and worthy of careful study.

WARNER P. SUTTON,

Consul.

UNITED STATES CONSULATE,
Matamoros, October 16, 1880.

Note by the Department of State to Consul Sutton's Report.—Accompanying the foregoing report were some carefully prepared statistical tables showing the foreign trade of Mexico. As those tables covered the three

years ending June 30, 1875—the latest official statistics available—they were considered too old for these special reports. The tables, however, will appear in the annual volume of Commercial Relations for the year 1880, as they will there stand as reference tables for all future statistics of Mexican trade, they being the clearest, fullest, and best arranged, and the latest reliable, it might be added, statistics, giving full details of the imports and exports of Mexico with foreign countries.

CLIMATE AND HEALTH OF THE CITY OF MEXICO.

REPORT OF CONSUL-GENERAL STROTHER.

The city of Mexico is situated near the center of an elevated plain or valley, 31 by 45 miles in extent, with an average altitude of 7,500 feet above the level of the sea, and inclosed by irregular mountain ridges and volcanic peaks rising to a height of from 12,000 to 18,000 feet, the summits of two of which are covered with perpetual snow.

The city, which is located in the lowest part of this valley, stands in the midst of a group of lakes, which occupy an area of about 50 square miles in the dry season, and are bordered by swamps of perhaps double that area liable to overflow in the season of rains.

Its geographical position is $19^{\circ} 26' 12''$ north of the equator, and its precise elevation above tide-water is 7,391 feet. The sun is vertical twice a year, in the middle of May when it passes to its northern limit of Cancer, and in the latter part of July when it returns towards the tropic of Capricorn. The longest day is 13 hours and 10 minutes, the shortest 10 hours and 50 minutes.

The power of the solar heat in this latitude is modified to such an extent by the altitude that the usual characteristics of a tropical climate almost entirely disappear, and we have in its stead a climate resembling more nearly a perpetual spring in the temperate zone.

The aptness of this comparison may be the more readily understood when we note the fact that the lower limit of perpetual snow on the peaks within sight from the city is only about 7,000 feet above the valley, which is the estimated height of the snow-line in regions lying between 40° and 50° north latitude.

The vast agglomerations of eternal snow and ice covering the summits of Ixtaccihuatl and Popocatepetl from 3,000 to 4,000 feet in perpendicular height and many miles in extent, besides the occasional snowfalls, which have a briefer existence on the inferior ridges and peaks nearer the city, are also to be considered as important factors in the climate of the valley.

Another notable peculiarity of the atmosphere is its extreme dryness, and consequent capacity for absorption, which is extraordinary.

Situated within the region of the "calms of Cancer," the valley never suffers from high winds; a destructive hurricane being an event of remote history, and the gentle alternations between light breezes and absolute calms not being disturbed on an average once in a century.

Surrounded by living and extinct volcanoes, the valley has always been more or less liable to earthquakes; but there is no record of any serious damage from this cause, and from century to century they are becoming less frequent and less violent.

The combined result of these various and somewhat antagonistic agencies is a climate singularly equable in its annual rounds, but quite variable in its daily and hourly gradations.

To present the subject more accurately I have appended several thermometrical tables.

The most notable variations in the weather are those caused by the alternating seasons of rain and drought. In April and May there are occasional light showers, but the regular daily rains commence in June and continue until the middle of October, when the season ends as it commenced, with a month or more of occasional drizzling and cloudy uncertainty. During the wet season proper, including the months of June, July, August, and September, the rain falls with considerable regularity every day, and usually in the afternoon, frequently accompanied by thunder and lightning, and occasionally flooding the streets of the city so as to render them temporarily impassable. The mornings during the period are luxuriously fresh and delightful, and, with the reasonable assurance of half the day for outside business or pleasure, many consider the rainy season the most enjoyable part of the year.

During the dry season, which continues with but few interruptions from October until May, the sky is usually cloudless and the temperature delightful. The city streets and public highways become intolerably dusty, and moving columns of dust, like water-spouts at sea, form one of the peculiar features of the arid winter landscape of the valley.

It will appear by reference to the thermometrical tables that April and May are the warmest months of the year, while December and January are the coldest, yet, although the vertical sun may be sometimes disagreeable to those exposed to its direct influence, and the biting frosts which occasionally destroy the flowers and budding leaves of January send a shiver through a delicate and thin-blooded person, the difference in the seasons is practically so inconsiderable that every month of the year presents its contribution of flowers, fresh fruits, and succulent vegetables; and while we sleep under double blankets and wear full winter clothing, including under-flannels, throughout the summer, a light shawl or spring overcoat with an additional blanket for the bed are the only extra provisions required to meet the winter, for it is to be borne in mind that in all the city and valley of Mexico there are neither fire-places, stoves, braziers, nor any other arrangement for artificial heat. While it is undoubtedly true that persons of sedentary habits or feeble vitality may often suffer considerably for the lack of these essentials of a northern climate, yet with ordinary robust health and judicious clothing one may live here all the year round without serious inconvenience either from cold or heat, for, as Clavigero, who wrote a hundred years ago, says of the climate, "it is so equal that if a man feels cold he has but to stand in the sun, and if too warm he has only to get in the shade."

Observations made at 7 o'clock a. m. from October, 1879, to October, 1880.

[Fahrenheit's thermometer in the shade.]

Month.	Maximum.	Minimum.	Average.	Variation.
	°	°	°	°
October.....	60	52	57	8
November.....	60	40	52½	20
December.....	55	44	51	11
January.....	56	40	50	16
February.....	57	48	52½	9
March.....	61	55	58	6
April.....	66	54	60	12
May.....	67	59	63	8
June.....	68	57	63	11
July.....	63	57	60	6
August.....	64	57	61	7
September.....	64	57	60½	7

Daily observations made at 7 o'clock a. m., for the month of May, 1880.

Date.	Tempera- ture.	Date.	Tempera- ture.	Date.	Tempera- ture.
	°		°		°
May 1	50	May 12	46	May 22	50
May 2	48	May 13	50	May 23	52
May 3	48	May 14	48	May 24	50
May 4	49	May 15	44	May 25	52
May 5	56	May 16	50	May 26	40
May 6	50	May 17	50	May 27	42
May 7	50	May 18	50	May 28	45
May 8	50	May 19	50	May 29	48
May 9	50	May 20	50	May 30	50
May 10	44	May 21	52	May 31	52
May 11	50				

General observations covering the full day of twenty-four hours.

[Fahrenheit's thermometer in the shade.]

Month.	Maximum.	Minimum.	Average.	Variation.
	°	°	°	°
January	77	35.1	55.4	41.9
February	77.5	37.4	57.4	40.1
March	83.8	41.9	61.1	41.9
April	90.9	43.7	67.8	47.2
May	85.1	52.2	67.5	32.9
June	84.2	52	60	32.2
July	82.4	53.1	64	29.3
August	81	52.5	62.1	28.5
September	76.1	47.8	61.5	28.3
October	75.2	41.7	59.7	33.5
November	73.6	41.4	57.6	32.2
December	71.6	30.2	54.3	41.4

HEALTH OF THE CITY.

Although the climate of this city and valley is flattering to the eye and senses, it is very far from healthy, and by the natives themselves is characterized as "fair but treacherous."

Strangers from more northern latitudes, and accustomed to the ordinary levels of human residence, on coming here are liable to a process of acclimation, of greater or less severity and duration, which, although usually very trying, is not very often fatal.

Among the first symptoms experienced by the visitor is a sensation of giddiness, exhaustion, and difficulty of breathing, especially on ascending a stairway or following rapid walking or extra exertion of any kind—inconveniences supposed to be attributable to the lightness of the atmosphere at this altitude. Then follows loss of appetite, extreme languor, accompanied by an anomalous remittent fever, which may last for a few days or a month, as the case may be. These symptoms are frequently varied with headache, neuralgia, obstinate catarrhs, coughs, diarrhea, and dysentery. Some persons may escape these manifestations entirely, others with light and partial attacks, while others may be fated to run through the whole catalogue, with additions, suffering for six months or a year before their entrance fee to this earthly paradise is fully liquidated.

Even animals are not exempt from the perils of acclimation, and I am assured by horse dealers from Texas that they lose from 12 to 20 per cent. of the horses brought here for sale, solely from the effects of climate. It is proper to note, however, that man is a much hardier animal than

the horse, adapting himself much more readily to extremes of temperature and changes of climate, and consequently the risks of actual loss of life in his case are greatly less and more remote.

Nevertheless, after the chances and annoyances of acclimation are safely passed, a glance at the recently-published statistics of mortality in this city is neither comfortable nor reassuring. A distinguished member of the medical faculty of Mexico has lately published a report, in which he demonstrates by comparative statistical tables that the annual mortality of the city is increasing to such an extent as already to counterbalance the natural movement of the population, and, if not checked in time, threatening the extinction of the race. Without pretending to discuss this conclusion, I have thought proper to insert some of the tables exhibiting the most frequent and formidable diseases of the climate and locality, named in the order of their respective fatality.

Population estimated at 225,000.

Pneumonia	13,779
Diarrhea.....	13,453
Pulmonary consumption.....	5,708
Typhus.....	4,993
Affections of the heart.....	3,368
Epilepsy.....	2,602
Dysentery	2,215
Diseases of the liver.....	1,985
Apoplexy	1,181
Intermittent fevers.....	563
Scarlet fever.....	253
Decrepitude	93

The figures are the aggregate of observations continued for a series of five years, and are only given here to indicate the comparative destructiveness of each disease named, but not the frequency of their occurrence.

Pulmonary diseases are the most rapid and fatal. There has existed, and may yet exist, in the United States an impression that "consumption" was not native in this region, and that the climate is favorable to that disease. Facts and statistics prove that it is quite the reverse.

Diseases of the bowels, chronic and acute diarrhea, and dysentery are the ruling diseases of the region in point of frequency, and compete closely with the pulmonary class in the aggregate of mortality.

Malignant typhus sometimes becomes epidemic, and carries off thousands in a season.

Cases of intermittent and remittent fevers are much more frequent than would appear by the tables, but, being less fatal in their character, do not figure in the death lists to any extent.

From 1869 to 1872 small-pox was epidemic in the city, causing the death of 3,522 persons, and leaving its impress on the faces of the living to an extent that I have never observed in any other population.

In 1870 there were 336 deaths from whooping-cough, and 354 from bronchitis the same year.

There is an occasional death from yellow fever, but as that disease cannot propagate at this altitude, it is buried with the victim who has brought it from the coast.

Among the infirmities which do not figure on the death-roll, rheumatism is one which is most frequent and causes most suffering.

Affections of the eyes, terminating in blindness, are also very common in this region.

We might complete the catalogue by adding the names of most of the diseases known to the medical profession in America and Europe, but presume it is sufficient for our purpose to have indicated only those which are most prevalent and most fatal.

* Returning to the statistical tables we find the annual aggregate mortality for ten years stated as follows:

1869	7,447
1870	7,733
1871	7,640
1872	8,172
1873	6,961
1874	8,453
1875	9,217
1876	10,390
1877	12,242
1878	10,161

Giving a total of 88,416 deaths in ten years.

The annual average is distributed among the seasons as follows:

Spring (March, April, and May).....	2,384.7
Summer (June, July, and August).....	2,300.9
Autumn (September, October, and November).....	2,014.4
Winter (December, January, and February).....	2,141.6
Total annual mean.....	8,841.6

The average duration of life computed from the foregoing tables is thus stated:

	Years.
1869	30.2
1870	29.0
1871	29.4
1872	27.5
1873	32.3
1874	27.2
1875	24.9
1876	22.1
1877	18.7
1878	22.6

Showing the average duration of life in the city of Mexico to be but 26.4 years.

In the year 1877, when the typhus epidemic prevailed, the mortality was estimated at 53.2 per thousand in Mexico. In Paris the same year the death rate per thousand is given at 24.6.

Of the sum total of deaths in the city of Mexico during the ten years reported (88,416), those of children under ten years of age amounted to 42,162—very nearly one-half of the aggregate mortality.

It must be observed that the foregoing statistical figures refer only to the city proper, and are calculated upon an assumed estimate, allowing it a population of 225,000, which, in default of any accurate census, may be accepted as approximately correct.

While the same diseases prevail to a greater or less extent throughout the valley, they are neither so frequent nor so fatal in the smaller populations as in the capital; and the adjacent towns and villages during the summer months are crowded with visitors seeking health, and to escape the infected air of the city. Indeed, the usual "prescription" of a conscientious physician for an invalid seeking advice is to "get out of the city as soon as possible."

The principal cause of this extraordinary insalubrity is doubtless the location of the city in the midst of swamps and shallow lagoons, which, with the changing seasons, alternately overflow and contract, exposing extensive fields of mud, filled with organic remains and decayed vegetation, to the burning rays of a vertical sun.

Another cause is imperfect drainage, chargeable principally to the low and level site of the city.

Much of the sickness and suffering is also directly chargeable to the peculiarities of the climate itself, its marked variations of temperature between day and night, from sun to shade, its extreme dryness and consequent capacity for absorption, evaporating the perspiration of the body with such rapidity as to make it very difficult to avoid colds, catarrhs, and the graver maladies resulting from the same causes.

When we consider, however, that the city of Mexico contains an uncommon proportion of a population whose habits and hygienic conditions are of a character to assist and encourage, rather than resist, the potent agents of disease and death with which they are environed, we cease to be surprised at the frightful figures which the learned professor has presented, and may even flatter ourselves with the belief that if the facts were properly ascertained, the death rate among the more intelligent and better provided classes might not appear very greatly in excess of similar classes in many other populous cities.

DAVID H. STROTHER,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
City of Mexico, November 15, 1880.

COMMERCE AND FINANCES OF HONDURAS.

REPORT BY CONSUL MORRIS, OF AMAPALA.

The commercial condition of this port and adjoining coast of Honduras has shown no improvement since my last report; the exceedingly severe rainy season of 1879 caused the failure of the crops and a great scarcity of corn and beans, which grains form the principal sustenance of the people, and brought the poorer classes to the brink of starvation. The price of corn rose to 7 cents per pound, and supplies had to be brought from California.

In consequence of the poverty of the people importers have been obliged to reduce their importations for this year, and therefrom results a reduction in the income of the government from custom-house dues, to counteract which the duties on importations have again been raised. But notwithstanding this measure the product of this custom-house will fall short about 40 per cent. of last year's proceeds.

A continuance of the bad state of affairs in this section of Honduras is to be feared on account of the grasshoppers, which made their appearance since June last.

The government continues to convert the little silver which the mines produce into coin (of which I remitted specimens with my last report), but as this coin is not current in the neighboring republics of Salvador and Nicaragua, a new obstacle has been created for the extension of commerce between these States, more so as Nicaragua also has brought into circulation her own coin, manufactured in England.

Since September Congress has been in session, but the results of the labors of that body have not been published.

For some time there have been rumors of a rupture between the republics of Salvador and Honduras, and both have introduced large quantities of arms, &c., but about a month ago Salvador delivered up the alleged leaders of the revolution in Honduras; one of them was shot, and it appears the "*entente cordiale*" has been re-established for a time.

GEO. A. K. MORRIS, *Consul.*

UNITED STATES CONSULATE,
Amapala, October 3, 1880.

DECREASE OF AMERICAN SHIPPING AT BUENOS AYRES, ARGENTINE REPUBLIC.

REPORT BY CONSUL BAKER, OF BUENOS AYRES.

The depression in United States shipping at this port, referred to by me in dispatch No. 348, still continues.

Since the 1st of January last there have only been fourteen arrivals of American vessels against thirty-six for the same period in 1879.

We have now but one American ship in this port. I have already mentioned incidentally the cause of this disappearance of American ships from Buenos Ayres. The rates of freight between the United States and the river Plate, which ship-masters heretofore received, have been broken; and vessels for the American trade are not chartered for lump sums. While the charterers, however, get the cheapest rates possible from the vessels, they exact the old rates from shippers; the difference going into the pockets of ship-brokers instead of ship-owners.

By this species of competition only the poorer class of foreign vessels are willing to take charters; and American ships, which in former years had nearly all the carrying trade between the United States and the Argentine Republic, are now cut out and seek other ports for cargoes.

The remedy would seem to be with our insurance companies, in declining to take risks at the usual rates on shipments made in bottoms whose unseaworthiness must cause them to deliver their cargoes in a more or less unsatisfactory condition.

E. L. BAKER, *Consul*.

CONSULATE OF THE UNITED STATES,
Buenos Ayres, June 2, 1880.

EXPLORATIONS OF PATAGONIA.

REPORT BY CONSUL BAKER, OF BUENOS AYRES.

I have to inform you that the exploring expedition through the interior of Patagonia, undertaken by Francisco P. Moreno, under such promising auspices, and a reference to which I made in my dispatches Nos. 329 and 345, has resulted disastrously and been abandoned. It appears by information received by the Argentine Government that Señor Moreno was made a captive by the Pehuelche Indians, through whose country he was progressing, and held by them as a hostage for the safe return of certain warriors of the same tribe, whom the Argentine army had some time before captured on the frontiers. An exchange had been accepted by the government; but subsequently the Indians reconsidered the matter, and, for the late aggressions of the Argentines upon their hunting grounds, they determined to retaliate by killing Señor Moreno.

Through the interposition, however, of a friendly Indian, Señor Moreno managed to effect his escape, while his captors were engaged in a drunken feast, and made his way on a raft down the Rio Negro, safely arriving at Carmen de Patagones after suffering great privations for many days.

Another expedition, a branch of that of Señor Moreno, under the

direction of Ramon Lista, has also come to conspicuous grief in Patagonia. He was charged with the work of searching for fresh water on the barren plains west of the Gulf of San Matias. He was unable to find any; and the supply which they carried with them becoming exhausted, the party were on the point of perishing, when they were relieved by an Argentine man-of-war which was lying at anchor in the port of San Antonio (it is called a port for the reason that it might be made one), and the expedition has returned without accomplishing its object. I inclose Señor Lista's account of his failure. It is not probable that a road can be opened between Carmen de Patagones and Santa Cruz—the ultimate aim of Señor Lista's expedition—for the lack of water, unless it can be obtained by sinking artesian wells.

E. L. BAKER.

CONSULATE OF THE UNITED STATES,
Buenos Ayres, May 19, 1880.

DISCOVERY OF COAL IN PATAGONIA.

REPORT BY CONSUL BAKER, OF BUENOS AYRES.

As a matter of general commercial interest, I have to inform you that bituminous coal has recently been discovered on the east shore of "Skyring Water," South Patagonia. Samples left at this consulate for examination show that it is of fair merchantable quality, much superior to that which is now taken out at Sandy Point, in the Straits of Magellan.

The specimens, however, are only the outcrop of the surface, and the coal is expected to improve as the digging progresses. I am advised by Messrs. Simoza and Miró, of this city, who have a concession from the Argentine Government to work the mine, that the coal lies in two seams, each of about 7 feet in thickness, with a dip of 40° to the west. This would indicate that it must exist in an immense quantity in that region. The company have purchased tug-boats and barges to carry the coal, when extracted, to a small bay marked on the Argentine maps as "Bahia Fortescue," on the peninsula of Brunswick and east shore of Smith's Channel, which is the usual passageway of Pacific-going steamers, where a coaling station is to be located. On yesterday a vessel cleared from here with a large number of miners to begin operations. It may be well to advise the Navy Department of this coaling station.

E. L. BAKER.

CONSULATE OF THE UNITED STATES,
Buenos Ayres, June 2, 1880.

WHEAT AND FLOUR IN THE ARGENTINE REPUBLIC.

REPORT OF CONSUL BAKER, OF BUENOS AYRES.

The Argentine Republic was last year congratulating itself upon the fact that it had at last become an exporter of breadstuffs, but for some time it has been apparent that the wheat crop of the past harvest is very considerably short. This is explained by the plague of grasshoppers which devastated a large part of the province of Santa Fé, the principal wheat-producing section of the country.

Owing to this deficiency the price of breadstuffs in this market has already advanced to unusual figures, and, until another crop can be

matured, it will be necessary to depend on importations to supply the home demand. Considerable flour has already been shipped over here from Montevideo, and two or three cargoes of wheat have just arrived from Chili, and more are announced as on the way.

In former years the United States largely supplied this market with flour, and it may be that the price will once more justify the shipment of flour cargoes to Buenos Ayres. According to the latest quotations the price of wheat in this market is \$280 (paper currency) per fanega of nine arrobas, equal to \$9.14 gold per 225 pounds; and the price of flour is \$47 (paper currency) per arroba, equal to \$1.50 per 25 pounds, or \$6 gold per 100 pounds.

The duty on wheat imported into the Argentine Republic is \$1.00 gold per 100 kilograms; and on flour it is 4 cents per kilogram. An effort is now being made in the National Congress to repeal these duties.

E. L. BAKER, *Consul.*

CONSULATE OF THE UNITED STATES,

Buenos Ayres, May 25, 1880.

• OUR TRADE WITH THE ARGENTINE REPUBLIC.

REPORT BY CONSUL BAKER, OF BUENOS AYRES, ON AMERICAN TRADE WITH THE ARGENTINE REPUBLIC, AND HOW TO ENLARGE THE SAME.

The commerce of the United States with the Argentine Republic for the year 1879 shows a very gratifying increase over the figures of the previous year. The imports amounted to \$3,794,876, against \$2,753,589 in 1878, being an increase of \$1,041,287; while the exports to the United States in 1879 were \$3,791,292, against \$2,547,187 in 1878, being an increase of \$1,244,105. The total commerce was \$7,586,168, against \$5,320,776 in 1878. I give below a table which shows the principal articles of import, together with their value, as entered at the custom-houses here, for the last two years, to wit:

Principal imports from the United States.	1878.	1879.
Kerosene	\$279,173	\$348,855
Alcohol	246,608	263,112
Starch	69,418	82,459
Sugar	186,628	506,380
Drugs	73,543	78,325
Agricultural implements	15,933	52,994
Lamps and gas-fittings	11,424	33,538
Lumber of all kinds	864,858	1,187,732
Machinery	48,910	144,078
Mercery	10,985	35,610
Furniture	99,239	103,344
White paper		18,384
Paints	46,190	52,302
Tobacco	109,632	138,553
Cotton fabrics	105,912	115,704
Other fabrics	68,591	69,538
Railroad machinery		42,894
Plows	52,657	35,028
Groceries	23,631	20,670
Ship-chandlery	4,290	20,256
Coal and coke	54,683	39,568
Fire-crackers	12,182	10,535
Preserved meats	5,529	14,128
Hardware	145,682	129,531
Steam-engines	3,120	6,000
Lard	82,545	25,973
Objects of art	14,303	19,090
Perfumery	32,328	20,921
Rosin and tar	37,005	24,366
Glassware	1,240	1,069
Stationery	10,608	14,082

From the above comparison it will be seen that the increase in the amount of imports from the United States for 1879 over the previous year is confined in great part to raw materials and a few objects of prime necessity for which the United States is almost the exclusive market, such as kerosene, alcohol, starch, sugar, lumber, tobacco, &c. The figures give a small increase to the imports of drugs, agricultural implements, lamp ware, furniture, paints, ship chandlery, cotton fabrics, preserved meats, &c., but there is an actual decrease in plows, fire-crackers, groceries, coal and coke, and the various articles of hardware, while in hundreds of other items we show no trade at all. The great bulk of the imports of manufactured articles still belongs to the countries of Europe. To see at a glance how little we are doing and how much we might do, I place side by side the total shipments to the Argentine Republic in 1879 of the following articles, with the proportion of the same furnished by the United States:

Articles.	Total imports.	From the United States.
Jewelry	\$186,389	\$959
Fire-arms	129,127	3,457
Saddles and harness	100,089	2,238
Boots and shoes	467,268	700
Coal	423,996	31,080
Carriages	22,027	5,030
Cigars (all kinds)	147,871	162
Comestibles	65,631	1,913
Preserved meats, &c.	244,680	14,128
Glassware	26,628	2,576
Drugs and medicines	636,455	78,325
Preserved fruits	22,480	235
Hardware	1,768,043	120,531
Soaps	22,254	225
Hams	35,312	1,610
Stationery	267,474	14,062
Crockery ware	256,140	90
Cotton-thread	73,918	460
Canned soups	22,254	8
Meccery	1,672,552	35,610
White paper	390,088	18,384
Paints	458,027	52,302
Cheese	141,124	1,645
Cotton fabrics	5,213,852	115,764
Hats and caps	568,282	1,056

HOW TO INCREASE AMERICAN TRADE.

In regard to the methods for securing this trade or at least such part of it as we have the facilities for furnishing, I have heretofore, in annual as well as special reports to the Department of State, very fully expressed my views; and it would be a repetition to say anything more at present on the subject. I have also adverted to the discouragements and difficulties, even under the most favorable circumstances, which are in the way of a speedy realization of a very favorable result to our efforts to extend American trade in this country, and insisted that the final triumph on our part, if it comes at all, must come from a steady, determined, and persistent pressure. I do not know that I can add anything in the way of information or advice. There are, however, a few suggestions which I may be permitted to address to those who are seeking to secure the import trade of the River Plate:

1. They must in their dealings conform to the usages and customs of the market. I cannot better make myself understood than by quoting an extract from a note written to me on the subject of American trade

by an English house doing business here, one-half of whose sales consist of American goods. They say:

The real difficulty in working up an extended business from the States is that although the manufacturers are nominally very anxious to go in for trade with this country, they expect the merchants here to find the capital to introduce articles which they do not know and which must compete with European articles, which, being well known, are of ready sale, whilst United States articles of equally good quality may be unsalable (*clavos*), through not being gotten up suitably for the market. The manufacturers in the United States will not trust the merchants here, and complain that the merchants will not trust them with money in advance, forgetting that the merchants can get as much as they require of European manufacture with long credits. The first thing American manufacturers must do is to send us samples, not runners. Out of the samples some can be selected for trial and recommendations sent home with particulars as to the mode of making up the goods. On these the manufacturers must work and send out a few packages on their own account. If they are sent and the manufacturers cannot afford to wait for their money until the goods are sold they must either send their goods through a bank, paying a bank commission and interest, or pay some banking house in Europe a commission for accepting their draft, the remittance going through the same banking house. The drawback against these modes of recouping their outlay is that they have to pay for these facilities a percentage which the European manufacturers, who can afford to wait, look upon as profit on the transaction. The great mistake of American manufacturers is that they hold out for cash or heavy advance against shipments. Let them trust merchants here. Some may be bitten heavily, but the trade will come; without this trust and confidence, *mañana* (to-morrow).

2. They must consult the styles and tastes which are in vogue here. What would from its make or fashion attract a market in the United States would be overlooked or rejected in the River Plate. Everything will not suit this market. The Argentine people are exceedingly fastidious in their tastes and in their surroundings. They pay more attention to show and outward appearance than perhaps any people in the world, and they affect in a wonderful degree whatever the fashions of Paris approve. I make this statement especially with reference to dress-goods, boots and shoes, hats, caps, and wearing apparel generally. The import trade in these articles, as has been seen, is immense, but it would be idle for American manufacturers to undertake to supply it without first thoroughly acquainting themselves with the peculiarities and idiosyncracies of this market; for their goods, though never so well made, might fail to please. And yet, I believe, if properly worked up, the United States might secure a large share of this department of trade.

3. Shippers in the United States must pay more attention to the preparation of their articles for shipment and to their packing. The latter in many cases is especially defective and careless. It seems to be assumed that the same manner of boxing which will answer for sending goods by rail from one part of the United States to another will answer for their shipment to the River Plate. They must remember that it is a long voyage over sometimes very rough seas and across the heats of the equatorial regions. My attention was lately called to a shipment of felt hats, which when opened were found to be entirely ruined. They had been packed without having been properly dried after their manufacture, and they were spoiled by the moisture left in them. I had occasion recently to examine a shipment of hatchets and hammers sent out from New York received in such a bad condition as to be unsalable. The wood of which the handles were made had not been sufficiently kiln-dried, and the sap which was in them not only blackened them beyond recovery, but ruined the steel with rust. A magnificent grand piano of a celebrated American manufacture was received here a short time ago with the strings most shamefully rusted. The shippers had by some carelessness or oversight omitted to line the box in which

it was packed with a tin lining. A cargo of crushed sugar which was shipped from the manufactory, while still retaining moisture, was received here recently with a large proportion of the contents melted away. These are only a few instances out of many which have come under my notice since I have been stationed here. In the matter of preparing and boxing articles for export the Americans should learn a lesson from the English and French, who from long experience have reduced this very important part of the business of exporting to a science.

COTTON MANUFACTURES IN THE ARGENTINE REPUBLIC.

Before closing this part of my report, I would particularly call attention to the imports of cotton fabrics into the Argentine Republic, amounting last year to \$5,213,852. This is a trade which is not only permanent, but which must go on increasing with the growth of the country. There are no cotton manufactories in existence on the River Plate, and their establishment here is a doubtful contingency in the far future. At present a great proportion of this trade belongs to England, that country furnishing cotton fabrics last year to the amount of \$3,188,551. No doubt a considerable proportion of this trade results from the fact that the leading importers of dry goods in this market are English houses or houses having English connections; but it is a conceded fact that English cottons are not to be compared with those furnished by American mills, the latter at once commending themselves by their superior body and strength, and by their freedom from dirt and sizing. And there is no reason why Americans in this line of manufactures should not supplant the English in this market. One well-known house, that of Matthew Forester & Co., has already done something towards introducing the American goods to a market here, and the encouragement they have received is of the most gratifying character. Within the last few months the demands upon them for cotton fabrics of American manufacture have been greater than they could furnish. Bolivian merchants, now getting their supplies through this country, are satisfied with no other manufacture; while their superior quality is attracting the attention of many Argentine merchants in the interior towns, who have heretofore been accustomed to deal in the fabrics furnished from Europe.

But to secure a strong position and a permanent foothold in this market, it is necessary that the American manufacturers should do something more than send samples or ask for information. The field is a large one and needs to be worked. The manufacturers should unite together and send an agent here—not to sell, nor even to receive orders, but to “spy out the land”—to obtain exact information in regard to the wants and demands of the market, the kinds of fabrics best suited to the trade, the number of yards to the piece, and the proper widths, with such other points as an expert in the business fully understands. Consuls, of course, are ready and willing to afford their countrymen all the assistance in their power, but it is not all of them who are sufficiently acquainted with the details of the business to be able to decide on the qualities of different fabrics or report on the most approved trade-marks. Our cotton mills, I am satisfied, can have the trade of the Argentine Republic in their own hands if they will quietly and systematically work for it; but to effect this it requires time, and, it may be, the expenditure of a little money for the expenses of agents to secure the “points” which the manufacturers must have to work intelligently. Even then, however, an almost indispensable prerequisite to securing the Argen-

tine market for cotton fabrics (as indeed for nearly all descriptions of dry goods) is the establishment of a direct line of steamships with the River Plate. I have referred to this subject so often that I hesitate further to enlarge upon it. It is next to impossible for American manufacturers, even with better goods to sell, to compete with the English market on equal terms without the advantage which quick and sure intercommunication affords. Since the operating of the ocean cable such large stocks of merchandise are not held in this market. They are ordered by telegram as they are needed, and the saving of time and dispatch with which orders can be filled in England and other maritime countries of Europe, will still give those markets the preference. When the fleet of ocean steamers by which Europe is connected with the River Plate can put down at this port goods ordered by cable in from twenty to twenty-five days, merchants here, however well disposed they may be, will hesitate about sending orders to the United States, knowing that they cannot be filled except by sailing vessels which require from sixty to ninety days to make the voyage.

AMERICAN STEAM COMMUNICATION WANTED.

Should an American line of steamers be put on, direct to the River Plate, in my opinion it would not be long in working great changes, if not a revolution, in the trade of the Argentine Republic. There was general satisfaction here when recently an *avant courier* of the Roach line of steamers made a visit to this port with a view to the establishment of direct steam communication. Not only from selfish considerations for the development of our foreign trade, but from a broad political point of view in its influence in strengthening, confirming, and encouraging this republic in the promising career which is before it, it is to be hoped that our government may be able to assist this enterprise. Our interest in the political prosperity of the South American Republics, nearly all whose foreign business associations are now monarchical instead of democratic, should prompt us, if possible, to bind our own to the republics of the River Plate by the strong bonds of a mutual reciprocal trade. Commerce is the great civilizer and political missionary of the world; and the ideas and methods by which the United States have advanced to their present commanding position among the nations of the earth, if brought into closer contact and communion with this country, could not fail to act and react most favorably upon its commercial, industrial, and political destinies. In no other way could we better spread and propagate the principles and ideas which have built us up as a great nation, than by the secret, silent influences of a closer and more intimate intercourse. As it is, we are in a measure isolated from South America. Its possibilities are a sealed book to us. Its heroic struggles against the fearful odds of the old Spanish conquest, to rise to a higher level of civil and political freedom, have thus far met with no recognition by us except the cold sympathy of diplomacy. Let us show by practical methods the deep interest we take in the welfare and advancement of the Argentine Republic; and republican government, not only here but everywhere, will be the gainer. And we will be stronger and more firmly established by the reassuring company of the strong republics we will see marching forward with us in the race of empire.

E. L. BAKER,
Consul.

UNITED STATES CONSULATE,
Buenos Ayres.

STEAM COMMUNICATION WITH BUENOS AYRES.

REPORT BY MR. OSBORN, MINISTER RESIDENT TO THE ARGENTINE REPUBLIC.

On the 17th instant, Col. W. P. Tisdell, the agent of Mr. Roach's line of American steamers from New York to Rio de Janeiro, arrived in this city, for the purposes of examining into and reporting upon the feasibility of extending the line to this city. After Colonel Tisdell had had conferences with our merchants, I had the pleasure of presenting him to the minister of the interior, and Acting Minister of Foreign Affairs B. Zorrilla, on the afternoon of the 20th instant, and in the evening to the President and the other ministers, at the President's private residence, at the President's request.

In the interview at the executive mansion, the President said that under the administration of President Sarmiento the Argentine Congress had voted a standing subsidy of \$20,000 a year to any company that would place a line of steam vessels from Buenos Ayres to any port of the United States, and that during his administration, on the 19th of June, 1878, after an interview with me on the subject, he sent a message to Congress asking for \$25,000 as a subsidy for such a line, and that Congress did not hesitate a moment to vote it. The President further stated that not only he and the authorities, but the people of the Argentine Republic, felt the liveliest interest in the project to draw closer the commercial and social ties between the two countries through the medium of steam communications, and that if Colonel Tisdell—although his administration would go out of power in a few days—would present a petition, he would send it to Congress at once, with a message asking that the subsidy be increased, and that if Congress could reach it before the close of its session it would undoubtedly be passed.

The present administration closes on the 12th of next month, when General Roca will be peacefully inaugurated the next President. He probably understands the wants of this country, and is as progressive in his views as any President this republic ever had.

In view of these facts, Colonel Tisdell will postpone the presentation of his petition until the next administration is under way.

In this view of the matter, with him I am in full accord. From our merchants and shippers on the River Plate, Colonel Tisdell has received great and strong encouragements in favor of extending the line to this port. The extension of Mr. Roach's line to this city will doubtless meet with strong opposition. Lamport & Holt now dispatch, and have for the past year, two steam vessels per month with cargo direct for New York, but the steamers so dispatched return by way of England; hence our products, which would and should find a direct route to the River Plate, are shipped to England and reshipped to this market as English products.

It is a notorious fact here that American hams, cheeses, and many other articles of American product find their way to this market as English goods, simply for the want of steam communication between this port and New York, or some other ports in the United States.

It is believed here that if Mr. Roach will extend his line to this point, and it can live for one year, it will be a success.

THOS. O. OSBORN,
Minister Resident.

LEGATION OF THE UNITED STATES,
Buenos Ayres, September 22, 1880.

AMERICAN TRADE WITH BRAZIL.

REPORT BY CONSUL PRINDLE ON THE TRADE OF THE UNITED STATES WITH BRAZIL, AND ON THE BEST METHODS FOR THE ENLARGEMENT THEREOF.

Trade between the United States and this part of Brazil appears to be increasing, it is true, but the imports from the United States, showing as they do a volume so much below the exports thereto, are still very far from satisfactory, and, in my opinion, the cause lies mostly with our own people. When I arrived in Para some two years ago, two American firms had just commenced business here under, apparently, the most favorable auspices. Many of our merchants and manufacturers at home stood ready to make large consignments to them, and, in fact, large shipments were made to them at the outset, but the returns being very unsatisfactory, and continuing so, both firms were obliged to wind up their business, and went out of existence in about eighteen months from the date of opening, leaving but one house which accounts itself American in Para. The main cause of the non-success of these firms I consider to have been lack of a knowledge of the language of the country.

There is great competition here among the English, German, and Portuguese merchants, &c., and the mercantile business of the place presents many peculiar features which absolutely require time for a foreigner, particularly it appears to me for an American, to become acquainted with. The peculiarities of the Brazilian tariff also, and the methods and customs in vogue at the custom-house here, and the losses oftentimes sustained by mistakes in violating some customs regulations, or by not knowing how to have merchandise manufactured and packed so as to be admitted at the lowest rate of duty, and, also, so as to avoid fines and penalties, operate very discouragingly on a beginner, and when to these is added ignorance of the language of the people the discouragement is very greatly increased.

I would not advise any American to attempt business in Brazil without first acquiring a good knowledge of the Portuguese language, for it is really an indispensable necessity in order to succeed.

I consider that the establishment of American commercial houses in Brazil would do more toward increasing our trade with this people than could be accomplished by any other means. Undoubtedly, in the course of time, we shall be much more numerously represented here than we are at present, but the process must, I think, be very slow unless there shall be a change of tactics. There appear to be but few American clerks in Brazil, even in American houses, and in this, so far as my knowledge extends, American merchants differ much from British and German, whose clerks are generally of their own nationality. I believe if a number of young Americans of good character and business ability, and well up in the Portuguese language, could manage to obtain positions in sound commercial houses in each of the principal cities on the coast of Brazil, in due time they would make their influence greatly felt in our

trade. But to go to work the other way, that is, establish, get out a stock of merchandise, invite consignments, &c., and then begin to learn the language and the business methods of the people, is to put both capital and credit to extraordinary risks, most generally fatal to success, as results have shown.

A. C. PRINDLE,
Consul.

UNITED STATES CONSULATE,
Para, October, 1880.

COMMERCIAL RELATIONS BETWEEN CHILI AND THE UNITED STATES.

REPORT BY CONSUL FOOTE, OF VALPARAISO.

I have the honor to transmit herewith a copy of the official paper of Chili containing an article upon the commercial relations between the United States and this country, together with a translation of the same.

The article was written by Mr. Ricardo Beccerra, chief of the Bureau of Commercial Statistics of Chili, and by reason of its semi-official character I deem it not out of place to forward it to the Department.

LUCIUS H. FOOTE.

UNITED STATES CONSULATE,
Valparaiso, June 19, 1880.

[Translation.]

COMMERCIAL RELATIONS OF CHILI WITH THE UNITED STATES.

From the data collected, systematically arranged, and published in the yearly reports of the bureau of commercial statistics, it appears that Chili imported from the United States, in 1856, assorted merchandise to the amount of \$2,439,153, and in return exported her own agricultural and mining products to the markets of the United States to the amount of \$3,090,899.

Our business thus, in that year, with the great republic aggregated the respectable sum of \$5,530,052, an amount certainly greater than its commerce with any of the other republics of this continent. Nevertheless, in the course of twenty-four years only, this condition of things has totally changed, to the great detriment of both nations. While the commerce between Colombia and the United States reaches the sum of a little over \$7,000,000 per annum, and with Venezuela exceeds \$11,000,000; while her commercial relations with the far-off Argentine Republic and the petty republics of Central America are every day assuming greater importance, our commercial statistics hardly make any record of trade, and this record only shows a trifling amount of the commerce between Chili and the United States, which in other times was so active and profitable. The decline is shown by the following official figures.

In 1860 importations from the United States had fallen from \$2,500,000 to \$1,085,000 in round numbers. Three years later, our exports of copper and ores still amounted to \$1,250,000, while the imports of American products amounted to about the same sum.

In 1868 the decrease was still more noticeable, our exports scarcely reached half a million, or \$400,000 less than in 1844, in which year the United States were purchasers from us to the amount of \$956,052.

From 1874 to 1878 trade continued in the same depressed condition, and it is but reasonable to suppose that the fluctuations in exchange and difficulties in obtaining exchange will have, during the course of 1879 and the present year, still further reduced the figures representing commercial intercourse of the two peoples.

In the tables of commercial statistics, which we may properly call a journal of our progress, the total of the trade between Chili and the United States, during a term of twenty-two years, from 1844, is set down at the respectable sum of \$83,730,000; what will be the insignificance of the total for an equal period of time reckoned from 1866 may be easily calculated from the data we have already given, and it is no rash asser-

tion to say that if the causes which have led to this decay be not considered and some remedy applied, the day will soon come when trade between Chili and the United States will be but a sad reminiscence of our commercial statistics. It is but proper to add in support of our observations on this decay, that the same is observable with other countries, the Argentine Republic, Ecuador, and Colombia, with which, at a period not very remote, and under circumstances much less favorable for developing and increasing trade, our own country had an active and mutually advantageous commerce.

The decline or disappearance of such valuable elements of progress is equivalent to a defeat in the great struggle of labor and of commerce, which exchanges the product of the same—a defeat to which a country such as ours will not tamely submit, accustomed as it is to wrestle with financial questions. It has wrought out of an almost unknown colonial province, that hardly had a place on the map of the old Spanish empire, a country of wealth and stable government; nor can it be said that a satisfactory compensation is found in the fact that our exports have only changed their direction, and that they are now as great or greater than they were at the time when they were divided up among many consuming centers, since in the first place the distant and almost sole market where our copper and wheat are now sold is not as safe or advantageous as those we have already or are now about to lose. In addition to which, the producing interest should consist not only in a diversity of products, but also in the diversity and greatest possible number of markets for their sale.

It is as dangerous to depend upon a single market for the sale of our products as it would be to confine ourselves to one single article of production. Furthermore, it is a matter of greater importance, perhaps, to secure a competition for the increasing exports of a country than to secure a diversity of productions. The cereals and ores of Chili that were formerly divided among Peru, Bolivia, Ecuador, the west coast of Colombia, and the United States and the Argentine and Uruguayan Republics on the Atlantic, have, in the course of time, wholly changed their course and destination to an extent that at present, and particularly with regard to cereals, they are held, as it were, in a vise, not to be loosened until the cable advises that the crop of the Old World is insufficient, and that the great granary of the United States is inadequate to supply the deficit, running a risk in the mean time that the property thus tied up would overstock and ruin our home markets to the wreck of our capital and credit.

An investigation thus of the causes which have led to these serious commercial disturbances becomes a matter of the greatest importance. It should be the aim and purpose of our own country, and also of those who but yesterday were connected with us, and the increase of whose relations with us is a matter of consequence, one of first importance, to remove, as far as depends upon the policy of the government and the laws, the causes that have produced the present condition of things.

This, in our judgment, becomes a matter of still greater weight, since the fortunes of the war into which we were driven have placed us in possession of vast riches, the nature of which is to incite improvidence, idleness, and neglect, to the imminent danger of our future. It is indispensable that we should give to those fruits of our victory no greater value or importance than they are entitled to; that we should hold that labor alone is what we depend upon, seeking to improve, as far as possible, the nature of those products, and stimulate in the same manner their active and safe interchange. Chili's victory would be, at best, but ephemeral, and might be prejudicial, if it became only a financial one for the government, and a transient increase to the capital of the people.

The blood that such victory has cost, the bravery and honor with which, up to the present time, it has been attained, demand that the results be of higher and greater import; it demands that our agricultural and mining interests be developed to the fullest extent; that commerce be extended; that we create a powerful mercantile marine; and, as a consequence of all, that we increase the wages of labor, which means the raising of the working classes to the rank of property-owners by securing them a future, and making accumulation possible.

The causes, then, that, within the last twenty-four years, have led to this extraordinary decay in the commerce of Chili with the United States are apparent.

The astonishing development of the agricultural interests in the old mining regions of California, together with the fact that there, on rich and virgin soil, scientifically cultivated, are produced the same articles raised by us here on worn-out soils, imperfectly cultivated without the aid of fertilizers, constitutes the first and most conclusive of such causes. Not only have our cereals been driven out of the advantageous markets of California, but by the products of this same California they have been supplanted in other markets, which, but a short time since, were our own. United States flour to-day finds its way to Central America, Panama, Ecuador, and occasionally has reached even our own country to supply the deficit created by bad crops, unwise commercial calculations, or our imperfect methods of planting and gathering our crops. It is not singular that in San Francisco Chili flour should be no longer used, inasmuch as that essentially agricultural land produces wheat with such wonderful

profusion, but it is singular, and very singular, too, that the wheat of California, which is, as it were, but of yesterday, should have absolutely driven Chili wheat, of long standing and high repute, out of all the markets of the Pacific coast. Our inability to enter into competition with it indicates the existence of questions to be resolved with regard to low rates of interest, the use of agricultural implements in planting, of fertilizers, and means of transportation.

These questions must be considered in the light of the requirements of our agricultural interests.

If, however, there are reasons why California, so far from buying wheat from us, brings her own extraordinary production of this article into competition with our own, such reasons totally fail when we come to consider other articles which, twenty-five years ago, we exported to the markets of the United States, and to a very considerable extent.

Why is it, then, that the United States are no longer purchasers of our copper? Why is it that they have ceased to work up our wool? In 1866 we exported to the United States \$1,000,000 worth of these two articles; in 1862, \$1,943,429; and in 1863, still \$223,600. This trade, far from tending toward an increase, seems to be on the verge of disappearing. Is it, then, because the United States produce all the copper they require in their manufactures and ship-building? Most certainly not, if we are to believe their own statistics and the reports of some of the branches of their manufactures. The yield of copper in the United States is not sufficient for their consumption, and it is necessary to import from England part of that which England receives from Chili. As may be naturally supposed, this reaches the hands of the consumer in the United States with an addition of the charges for the increased freights, expenses, and profits of the first purchaser. The same, or something very nearly so, though perhaps on a smaller scale, occurs with regard to our wool. All this is due to the protective, or rather prohibitory, tariff which the Government of the United States have put in force, more particularly since 1863, when they were called upon to meet the expenses of their tremendous war of secession.

This is not the proper time or place to renew, even incidentally, the discussion on the great question of protection or free trade, considered as agents in the prosperity or stagnation of nations. It is enough for our purpose to remark that the present sound financial condition of the United States, particularly from a manufacturing point of view, imperatively demands a change in the commercial system hitherto followed, and this whether the present condition of things be due to protection, as is claimed by some, or whether it be due to the natural and varied richness of the soil, the practical intelligence of the people, or more than all to the excellent method of education there pursued by both state and society in shaping the intelligence of the individual by useful sciences to practical purposes and of present use in the necessities of modern life.

It is now scarcely forty years (but a moment in the life of a nation) since Mr. de Tocqueville, a profound observer of the philosophy of politics, which after all is the soul of the American democracy, asserted, notwithstanding, that so far as arts and manufactures were concerned, the United States were but a colony of the mother country. Now, and in spite of the short length of time that has elapsed since then, the United States have reached the point where they now are; that is, not only the first grain-producing country in the world, but at the same time one of the greatest manufacturing centers, the most extensive and cheapest manufacturers of all labor-saving machinery, which is the distinguishing feature of our day. Cotton and linen goods, agricultural and mining machinery, hardware of all kinds, furniture, scientific apparatus, sail-cloth, and ship-building material, and even the most refined productions of art, are to-day manufactured in that great mart in enormous quantities and at prices which enables them to control the different markets of the world.

This great power of production, however, does not enjoy the indispensable requisite of interchange by reason of the barriers (a high tariff) which it was said it was necessary to create in order to develop the strength and intelligence that produced it. Here again we see the truth of that fundamental principle of political economy which says that "free interchange is a condition of free production." The manufactories are overflowing with their products, and it has become necessary now either to find an outlet for them or to stop manufacturing. That was the principal object of the Centennial Exhibition, and this is the object of the divers undertakings of the merchants and manufacturers of that country in sending their agents to the different markets of the world, and particularly to South America. One of such was placed in charge of Mr. Parkenan, who has lately exhibited at Santiago specimens of excellent goods manufactured by the various companies which he represents. Our farmers, mechanics, and merchants have found among this magnificent collection articles adapted to their several requirements, many of which might be used in the country and at prices beyond competition. The agricultural implements and locks, in the opinion of connoisseurs, are particularly desirable both as to quality and prices. All of these goods exhibited show unmistakable signs of Yankee genius; the easy

and commodious adaptation of the various discoveries of science in connection with human labor as applied to the wants of every day life.

Commerce is nothing more than an interchange of products; and in order that we may become consumers of the manufactures of America, it is indispensable that our products should have easy access to the markets of that country. Drawing against England, as has been the case up to the present time, it is not probable that we will be purchasers to any great extent of the goods offered to us. Upon such a basis of trade, and however advantageous the prices might be, it would be impossible for them to compete with similar productions from other countries. England, which buys our copper and wool, can always sell us her cutlery and hardware on advantageous terms, for financial reasons that from their obviousness it is not necessary here to state. It is not, then, through the means of education pursued by the State, or the intelligence of the American manufacturer, that the problem of establishing extensive commercial relations between the two countries is to be solved. Let the manufacturers begin by making their own markets accessible, and asserting the principle of free interchange, without which unlimited production is simply ruinous. Let them seek to exchange for our copper and wool upon equitable terms, as in former times; then may they certainly reckon upon us as permanent consumers of their products. We will pay them for their machinery, hardware, and dry goods with our wool, niter, and copper.

Efforts to augment the various agricultural and manufactural products of a country within the natural limits imposed by soil, climate, geographical position, and the grade of civilization enjoyed, are always laudable. But countries are like the people who inhabit them; they were created under different conditions; and it is this very diversity that gives rise to their intercourse and wealth. Commerce is nothing more than an interchange of products; and when we say interchange, we say diversity of those products which supply commerce. Let us, for a moment, suppose that some day the United States should succeed in producing all the beet-root required for their refining and distilling purposes. What would they then receive in exchange for the many millions of manufactures annually exported to Cuba? It is true they would save 20 or 30 per cent. on their importations, but they would lose 100 on their exports.

The same rule that is applicable to sugar is also applicable to copper, if the same system of protection, or rather prohibition, is to prevail that has been in force as a means of developing her mining interests. It would appear impossible that the United States could desire to carry that diversity of products of which her soil and people are capable to such an extent. The government of that country is too intelligent not to perceive that, underlying the question, sought to be raised with regard to sugar-cane and beet-root, the bark and cotton of India, and the bark and cotton of America, there is a very important financial consideration. It puts in jeopardy the very existence of a large portion of America, that portion whose advent among the family of nations was looked to by the Old World as the restorer of the ravages and ruin accumulated during the long wars consequent on the French revolution.

Any country that seeks to produce all that may be required for its own wants and requirements precludes itself, from that moment, from producing a bar of iron, a stick of wood, or a yard of cloth for interchange with the rest of the world. An undue protection of the cotton and bark of India would result to England in the discharge of thousands of her workmen from her factories and the idleness of her merchant marine; so also will the United States have initiated their own ruin the day when they succeed in producing within their own limits all the beet-root, all the copper, and all the wool they may require for their own consumption. We, however, repeat that so restricted a policy can never be the policy of that great country, and now that her manufactories are overflowing with goods and her people are coming here to offer them to us, it is proper to remind them of the duty incumbent on them, and that they perform it; that, as products are exchanged for products, it is requisite and necessary that, if we are to purchase theirs, they must open the doors of their markets to ours.

ALLEGED STEALAGE OF GOODS ON THE ISTHMUS.

[The following is the extract from the annual report of Consul McLean, of Guayaquil (see Commercial Relations for 1879, vol. 1, p. 56), which led to the investigations and reports concerning the alleged stealage of goods in transit across the Isthmus of Panama, and is herewith republished in order to enable the reader to fully appreciate the whole question at issue.

"TRANSPORTATION AND STEALAGE.

"The bulk of the Ecuadorian trade goes at present to Europe, England having the principal part. Freight rates by steam from here to London or Liverpool are £5 per

ton, while to New York they are £6. The transportation companies claim that the greater volume of freight for Europe gives an advantage. This may be true, but it seems unreasonable, as the excess is not on the Pacific side.

"A more serious matter than the discrimination in cost for freight is the loss by robbery. Every shipment of rubber, cocoa, coffee, or ivory nuts made in Ecuador for New York is reduced from 5 to 20 per cent. by robbery, and this thieving is confined to goods consigned to New York. In examining into this trouble the fact became evident that the robbery was not committed on board the steamers of the Pacific Mail and Pacific Steam Navigation Companies, because the shrinkage is very regular—that is, from 10 to 20 pounds of rubber is stolen from each bale containing, at the time of shipment, six arrobas, or about 150 pounds. An average of ten pounds is stolen from each sack of coffee or cocoa, usually starting with 150 pounds, and an irregular quantity from each sack of ivory nuts. If the stealing was done on shipboard a large proportion of sacks would escape molestation, because they would be inaccessible after they were stowed below. There is rarely an opportunity to steal during the time the steamers are loading, because the Ecuadorian ports are not terminal points, but simply touching points, where the cargo is handled in the most expeditious manner possible. The same reason with more or less force applies to the Pacific Mail steamers; so the robbery is very evidently located on the Isthmus. Inasmuch as the goods mentioned are weighed in Ecuador by custom officials, and an export duty is laid on each pound, there can be no doubt about the weight leaving here. Occasionally small robberies are committed here in the launches of the Pacific Navigation Company, but they are trifling compared with those which are a regular part of the business on the Isthmus.

"Every shipment made to New York during 1879 was decreased in transit, while only two or three cases were reported in relation to goods shipped to England. This grievance is made more disagreeable by the fact that the Pacific Mail Company recover freight on the original weight instead of on what is delivered; thus the shipper to New York is not only robbed on the Isthmus, but compelled to pay freight at the rate of \$30 per ton for what has been stolen. Some means should be devised to make the Panama Railroad responsible for these robberies, and that would make the company guard the shipments. In the case of goods coming from the States the robbery is also a discriminating one. The rough handling in transit over the Isthmus breaks many packages and the contents are sampled by thieves."]

REPORT BY CONSUL THORINGTON, OF ASPINWALL.

In further reply to your No. 199, of the 8th ultimo, I have the honor to state that, after investigating as well as time and opportunities would allow, and consulting with officials of the Panama Railroad and Pacific Mail Steamship Company, as also the agents of other companies on the Isthmus, I am constrained to the belief that the charges contained in the annual report of the United States consul at Guayaquil, in so far as they relate to the Panama Railroad Company, are based entirely upon a mistaken supposition.

I find that all cargo from the South Pacific ports to the port of Panama is brought by steamers of the Pacific Steam Navigation Company—an English line—and is there discharged from said steamers at their anchorage, some distance out in the bay, into lighters belonging to this same company, under control of their employés, and is by them delivered to the Panama Railroad when ready to receive it, at the wharf of the latter company. It is there properly checked by employés of both companies, the necessary exceptions noted as to all packages not in good order, and then loaded into cars of the railroad, which are at once locked and securely sealed, and in that condition it is brought across the Isthmus without stoppage on the way, and delivered on this side within reach of the tackle of the steamer intended to receive it, when it is again checked and exceptions noted, and where it would be impossible to tamper with it without discovery.

In the same manner cargo brought to this port from any point destined to South Pacific ports is checked from the steamers into cars, exceptions noted, the cars secured with locks and seals, then taken across to Panama, where it is again checked, exceptions made, and delivered into the lighters of the Pacific Steam Navigation Company aforesaid, and there the responsibility of the Panama Railroad Company ends,

That there is some petty thieving done on the Isthmus at times from all the different companies is admitted, but that there is a systematic robbery carried on here on the Isthmus and a discrimination against the United States is believed to be utterly impossible. No corporation, it is believed, is more careful of merchandise of every description committed to its custody than the Panama Railroad Company, which is well evidenced, it is thought, by the remarkable fact that during the recent break in the road, owing to the enormous overflow of the very troublesome river Chagres, and when there was something like 20,000 tons of cargo at one time in their possession on the Isthmus, scarcely a package was either lost, stolen, or damaged, and this I am told by the agents of other companies here as well as the officials of the Panama Railroad.

In reference to the discrimination in rates of freight mentioned in said report—which I learn is £5 per ton to England and Germany and £6 to France and the United States—that, it appears to me, is readily accounted for by the fact of extensive competition to Europe on this side, and from the more important fact, as reported in a former dispatch, that nearly all of the European lines are largely subsidized by their respective governments. Some of their companies, I am informed, also make yearly contracts with shippers on the South Pacific coast for all their produce, allowing rebates off regular rate.

The Pacific Steam Navigation Company, with a magnificent fleet of steamers, I understand, not only have a monopoly of the carrying trade of the whole South Pacific coast, via the Straits of Magellan as well as to Panama, but are receiving a subsidy from several of the South American republics on the Pacific side; and I would take occasion here to respectfully suggest that, in my opinion, one of the surest, speediest, if not the only way to divert this growing commerce to the markets of the United States will be through the medium of a first-class line of steamers—to begin with originally foreign bottoms even if necessary—under the stars and stripes and with American agents of large and varied business experience in charge at the different ports. And it is believed that it would be a wise policy on the part of our government to assist liberally any company organized under our laws and willing to embark in the enterprise, and furthermore that with proper management this assistance would only be necessary for comparatively a few years.

As bearing further upon the subject matter of this dispatch, I now respectfully submit herewith a statement furnished me by Capt. John M. Dow, long connected with the interests of the Pacific Mail Steamship Company here, at present their acting superintendent, also of the Panama Railroad, and which is regarded as thoroughly reliable.

JAMES THORINGTON, *Consul.*

UNITED STATES CONSULATE,
Colon-Aspinwall, April 5, 1880.

DEFENSE OF THE PANAMA RAILROAD.

By Acting Superintendent Dow.

OFFICE OF GENERAL SUPERINTENDENT
PANAMA RAILROAD COMPANY,
Aspinwall (Colon), April 5, 1880.

DEAR SIR: In reply to your note of the 22d ultimo, asking me to state in writing the substance of what I stated to you verbally regarding the subject of robberies of cargoes in transit over this Isthmus from Guayaquil to New York, as charged by the

United States consul in Guayaquil in a communication to the Department of State, Washington, D. C., I have to say that the United States consul referred to is simply mistaken when he states that a regular system of robbery is carried on here, and that the losses from such robberies are so great as to effect a discrimination injurious to the trade to the United States. That petty thieving does take place here occasionally must be acknowledged, and it would be an exceptionally moral part of the world, where such large quantities of produce and merchandise are transported, if such were not the case. As an evidence of how small the percentage of robbery is on this transit, I may state that against the many thousands of tons of freight transported both ways over the Panama Railroad during the past year (1879), the total claims paid did not aggregate \$1,000 from all sources, and the claims were chiefly on merchandise destined for European ports.

If the consul at Guayaquil had only taken a little trouble to more closely investigate the subject on which he pretends to write, he would have learned that the robberies which he charges against the Panama Railroad were more likely committed in Guayaquil itself.

As having a bearing on the matter, I quote from a letter which I addressed, in October last, to the Panama Railroad Company in New York, as follows:

"In conversation the other day at Panama with Captain Hall, of the Pacific Steam Navigation Company, I incidentally alluded to this subject (robberies of cocoa), when he remarked that the shippers of cocoa at Guayaquil had become satisfied that the most, if not all, the robberies heretofore complained of had really been committed at that port. Mr. Obario, of the firm of Stagg & Co., informed Captain Hall that it had been discovered that some of the natives employed as packers of cocoa were in collusion with the crews of the lighters. It appears that it has been the custom at Guayaquil to have the cocoa loaded into the lighters, which are all open, sometimes two or three days before the arrival of the steamer by which it is to be shipped, and during this interval the packers, carrying with them the same kind of twine as that used in sewing up the bags, would go to the lighters in the night, open the bags, abstract some of the contents, and sew them up again. The captain further told me the shippers intended hereafter to mark each bag with a number, in addition to the weight, so that when a bag is received by the ship slack or apparently short of contents, it can be weighed by the receiving clerk, and, if found short, the number of the bag may be noted in the receipt. By this means it is hoped the robberies may be checked, if not stopped altogether."

As the consul at Guayaquil has directly charged the robberies, of which he claims to have knowledge, to the Panama Railroad, perhaps the State Department at Washington will see the propriety of requesting that gentleman to state where or from whom he got his information, and what are the proofs to support the very serious accusation made.

I am, yours, respectfully,

JOHN M. DOW,
*Acting General Superintendent Panama Railroad and
Pacific Mail Steamship Company.*

HON. JAMES THORINGTON,
United States Consul, Aspinwall.

ALLEGED STEALAGE OF GOODS ON THE ISTHMUS.

REPORT BY CONSUL McLEAN, OF GUAYAQUIL.

I have the honor to acknowledge the receipt on March 29 of Department dispatch No. 17 dated March 8.

In relation to so much of it as refers to frauds upon our commerce, I can only add additional details to what I have already written.

A number of merchants here complained to me about the great discrepancy between the weight of their shipments on leaving here and the weight on arrival in New York.

I made a careful examination before I made a report upon the subject. Every article shipped from this port pays an export duty. When a merchant has a lot of goods ready to ship, he is obliged to send to the custom-house for an official to weigh the goods. The duty prevents him from claiming more weight than there is.

No goods are received by the steamship company for shipment until the steamer is in port. The merchant's employes see these placed in the launches, and in this way the shipment reaches the ship's side, where it is embarked as speedily as possible. I have watched this process carefully, and I do not believe that there are any robberies committed in this port. I was forced to the conclusion reached by the merchants and steamship agents that the robberies occurred on the Isthmus.

The information in relation to the comparative immunity from robbery of the freight sent via the Isthmus to England was obtained from merchants, and verified by application at the office of the Pacific Steam Navigation Company. The agent of the company stated that "there were continual demands made upon them for short weight and broken packages in the trade with the United States, while there were only two or three similar demands during the year in relation to English freight." He also stated that the French freight was frequently robbed on the Isthmus.

The evils of this transshipment are so great that some merchants have procured goods from New York via Liverpool.

It is the universal complaint here that great injustice prevails upon the Isthmus, and it is an old complaint.

I am informed that freight which misses the connection, and is compelled to remain a week or ten days on the Isthmus, suffers most. It seems to me that the robbery must be done there.

ALEXANDER McLEAN, *Consul*.

UNITED STATES CONSULATE,
Guayaquil, April 3, 1880.

ALLEGED STEALAGE OF GOODS ON THE ISTHMUS.

REPORT BY CONSUL WILSON, OF PANAMA.

In answer to your No. 13, under date of March 8, inclosing extract from Mr. Consul McLean's annual report, in which he alleges that gross frauds and impositions are perpetrated, upon the Isthmus of Panama, in transshipping and forwarding goods from Guayaquil to New York, and *vice versa*, I have to make the following report. Upon receipt of your instructions I called upon the principal officers of the Panama Railroad Company and the Pacific Mail Steamship Company, and made known to them the charges made against their companies, and requested them to furnish me with such information as they thought proper in answer thereto. The charges were indignantly denied, and from time to time these officials have promised to furnish me with the proof to refute them; as yet they have not done so, only in an informal manner answering such questions as have been asked them regarding the manner of handling freight in transit across the Isthmus. It appears to be a subject upon which they do not desire to have much to say either way, other than to deny the charges in a general manner. From personal observation, and from what I have been able to learn from other sources, I find, first, that in the shipment of merchandize from Guayaquil, the cargo intended for shipment is first embarked upon launches of the Pacific Steam Navigation Company (British steamers), and then towed out to the mouth of the river at Guayaquil, and there awaits the arrival of the steamers, which merely touch there long enough to take what cargo there may be, before proceeding to Panama. These launches, I am in-

formed, remain there at times for several days awaiting the steamers, and it is claimed that the stealing, if any there be, could be done with greater ease and facility at Guayaquil than here.

The steamers of this line upon arrival at Panama anchor out in the bay some three and a half miles from the city and discharge their cargo into their own launches, which are then towed to the wharf of the Panama Railroad Company, where, upon arrival, the cargo is transferred from the launch directly into the cars of the Panama Railroad Company, each article being checked off as it passes from the agent of the Pacific Steam Navigation Company to the agent of the Panama Railroad Company. If any package is damaged or broken, an exception is made, and such package examined as to condition and contents. As soon as a car is full the same is locked and sealed, and, as soon as the train is made up, forwarded to Colon. During the loading of the car, and while it remains here, the company have watchmen, whose only duty is to see that nothing is taken from the cars, and that the seals remain unbroken. Upon the arrival at Aspinwall the cars and seals are examined, and any irregularity reported; if found all in order, the contents are unloaded directly from the cars into the vessels intended to receive such, according to their destination.

This in general is the manner of handling the cargo received here when it can be done. Freight, however, accumulates at each end of the line, and while awaiting shipment either remains in the cars, or is transferred to the company's warehouse. It is stated by the officers of the Panama Railroad Company, and the same information has also been given me by prominent dealers and shippers of rubber here, that in the transportation of the same from here to the United States or Europe the rubber will lose in weight from 10 to 20 per cent., and even more if stored in the hold of the vessels, as is usually the case, and other cargo placed upon it.

Crude rubber contains a large amount of water, which evaporates and is pressed out of the rubber when shipped, and this loss in ordinary shipments is said to be at least 10 per cent. In the case of coffee I find there is little if any shipped from Ecuador, that country not producing coffee to any extent.

Stealing, I have no doubt, is carried on here in a small way, the same as is the case in all places where large quantities of freight are handled. The laborers upon the vessels, launches, and in the warehouses engaged in handling the freight take advantage of any opportunity they may have. In order to prevent this the Panama Railroad Company require the laborers engaged in the warehouse to be searched upon leaving the same in the evening. It is said that the manner in which rubber is stolen is as follows: the rubber is first loaded upon launches from the vessels, and then towed to the railroad depot. On the trips, which have to be made at high tide, a bag or so of rubber is thrown overboard, and at low tide can be easily fished up. Owing to the wet condition in which most rubber is shipped, and the poor quality of bagging used in packing it, many of the sacks become rotten, and the rubber has to be resacked. Upon the delivery of the rubber at the wharf, owing to the sacks which have been thrown overboard as stated, the number of sacks is found to be short. The rubber is then resacked and the deficiency made good by taking enough rubber from that which is resacked to make up the number of sacks stolen. This practice was, I am informed, carried on here in former years to a considerable extent, but of late so close a watch is kept that but little is now done. An officer of the Panama Railroad Company informs me that in former years, owing to this

stealing, the company was required to pay several thousand dollars for stolen and short freight, but for the year ending 1879 they were only required to pay \$960 for lost, stolen, and damaged goods.

From my observation I do not think there is any systematized plan of stealing carried on here, and in the stealing which is done I do not think there is any discrimination made in goods to or from the United States, as fully as many complaints are made by European shippers. The same, if not greater, facilities for stealing are offered at Guayaquil, and upon the voyage to Panama, and subsequent transfer to the launches for delivery to the railroad company. If stealing to any amount, as charged by Consul McLean, exists upon the Isthmus, it could only be carried on by a systematized plan of the chief officers of the railroad company and the steamship lines. It is reported that such an arrangement exists, but from the best information I am able to obtain I do not think that any great credence should be given to the report.

There are many things in the present management of the Panama Railroad Company that could be greatly improved. Their tariff of freight could be reduced, and the discrimination in favor of European shipments should be done away with, as there is no good reason why freight intended for New York should be required to pay a greater price for transportation across the Isthmus than the same kind of freight intended for Europe.

In shipping goods across the Isthmus from New York to San Francisco, and *vice versa*, I am informed that the Panama Railroad Company receives one-half of the entire freight paid.

There are many other abuses and impositions existing. I do not think, however, there can be added to the list that of systematic robbery of the merchandise shipped to the United States.

JOHN M. WILSON,
Consul.

UNITED STATES CONSULATE,
Panama, June 3, 1880.

LOCAL AND TRANSIT TRADE OF PANAMA.

REPORT, BY CONSUL WILSON, ON THE TRADE, COMMERCE, AND NAVIGATION,
LOCAL AND TRANSIT, OF PANAMA.

I have the honor to transmit herewith tables showing the trade, commerce, and navigation of the port of Panama, number, nationality, and tonnage of vessels making Panama a terminal port, &c., for the year ending December 31, 1879.

I.—CHARACTER OF TRADE.

The commerce and trade of Panama naturally divides itself into two branches, viz, that which is local and that which is transit. The transit trade also may be divided into two parts, viz, that to and from the United States and that to and from Europe.

1. *Local trade.*

Table No. 1 shows the value and kind of declared exports from this consular district to the United States for the year ending December 31,

1879. The three principal articles of export are ivory nuts, rubber, and hides. During the last quarter of the year there was quite a falling off in the shipment of ivory nuts, owing principally to the great decline in prices. The shipment of rubber, on the contrary, owing to high prices, has greatly increased during the last two quarters. So much so has this been the case, that the supply is almost exhausted, and a large proportion of the trees have been entirely destroyed, owing to the injudicious manner in which they have been treated in order to obtain a greater yield. If the same ruinous system is continued it will require but a few years more to render worthless this hitherto valuable article of export.

Panama being a free port of entry and there being no official record kept of her imports, I have found it impossible to obtain any reliable information as to the value of the imports, either from the United States or Europe. By reference to Table No. 5 the number of tons of merchandise imported from the United States to Panama was 3,722 $\frac{2}{3}$, the exports being 3,362 $\frac{1}{2}$ tons, with a value as shown in Table 1. The principal articles imported from the United States consist of all sorts of canned goods, such as fruits, jellies, beef, corn, beans, &c. In produce, bacon, hams, lard, butter, flour, meal; in dry goods, prints, cotton, muslins, &c. Within the last two years the trade in American dry goods has greatly increased, and from one-half to two-thirds of the entire supply of this article is now obtained from the United States, whereas formerly it came almost exclusively from England, France, and Germany. The merchants here inform me that this is owing to the quality, style, and cheapness of that class of goods as now manufactured in the United States, that they find it to their advantage to make their purchases there, that in general the American goods are preferred to European, even at similar prices. From the best information I can obtain the entire local trade of Panama with the United States for the year is, exports, \$439,087.60; imports, say about \$450,000; total, \$889,087.60.

2. *Transit trade.*

The entire tonnage of transit trade of the isthmus is given in Table 2 for the years 1876, 1877, 1878, 1879, each year showing a gradual and steady increase of the traffic. Table No. 3 shows principal products of Central and South America, composing the transit trade for the years 1877, 1878, and 1879. The shipments of coffee and cocoa, it will be perceived, have greatly increased. Table No. 4 gives the amount of coffee received at, and forwarded from, Panama, and where to, during the first four months of the year 1879, amounting in all to 219,742 sacks. Of this amount but 24,706 sacks were sent to the United States, while to Europe there were sent 186,838 sacks. Table No. 5 gives the transit tonnage from and to the United States, giving a total of 58,341 $\frac{1}{2}$ tons, or 27 $\frac{1}{2}$ per cent. of the entire tonnage transported across the Isthmus; also, showing that almost three-fourths of the entire transit trade of the Isthmus is from and to Europe, with England, France, and Germany in the order named as to amount. Table No. 6 gives the number of passengers transported across the Isthmus by the Panama Railroad for the years 1876, 1877, 1878, and 1879. Table No. 7 gives the entire navigation of the port of Panama, nationality and tonnage of vessels for the year 1879.

II.—LINES AND EXTENT OF COMMUNICATION.

There are four lines of steamers which make Panama their terminal port: 1st, the line from Panama to San Francisco; 2d, from Panama

to Central America and Mexico; 3d, from Panama to the South Pacific as far as Valparaiso; 4th, from Panama to Guayaquil. The two first-mentioned lines are owned and managed by the Pacific Mail Steamship Company, of New York; the two latter by the Pacific Steam Navigation Company, of Liverpool, England.

1. The line from Panama to San Francisco runs two and, during the coffee season, three steamers a month each way, calling at Punta Arenas, Costa Rica, La Libertad, Salvador, San José, Guatemala, Acapulco, Manzanilla, San Blas, and Mazatlan, Mexico.

2. The Central American and Mexican line runs three steamers per month, each way, calling at Punta Arenas, San Juan del Sur, Corinto, Amapala, La Union, La Libertad, San José, Champarico, Port Angle, and Acapulco.

3. The line from Panama to the South Pacific runs weekly each way from Panama to Callao, calling at the ports Buenaventura, Tumaco, Guayaquil, Payta, connecting at Callao with their line to Valparaiso, and calling at eighteen different ports along the coast.

4. The line from Panama to Guayaquil runs one steamer per month, each way, calling at Ballenita, Manta Bahía, Esmeraldas, Tumaco, Buenaventura.

Table No. 8 gives the names and tonnage of the steamers of the Pacific Mail Steamship Company employed upon their two lines. Table No. 9 gives names, gross and net tonnage of steamers of the Pacific Steam Navigation Company that have entered the port of Panama during the year 1879. Total tonnage of the Pacific Mail Steamship Company's lines, 23,424. Total tonnage of the two English lines, 17,318.

From the South Pacific the bulk of the shipments consists of bark, cotton, cocoa, and rubber. From the Central American states, coffee, sugar, and indigo. The coffee trade of the Central American states, in a commercial point of view, is yet in its infancy, and will in time greatly add to the wealth and importance of these states. It is humiliating, however, considering the close proximity of our country to these and the South American states, and our similarity of government, to see at least two-thirds of the entire products of these countries find their market in Europe, and as a natural consequence receiving their supplies from there. If we wish to secure this rich trade we must furnish the means of transportation to our own market, and their products must be admitted into our ports upon the same terms and conditions that are granted them in other countries. The English, French, and German merchants fully recognize the importance and value of securing this trade, and every means in their power is used to secure and keep it. At present the English control, I should say, at least one-half of the entire trade of these countries, and in time, if our country does not appreciate the importance of having her share, it will pass entirely into their hands. The only thing that enables us now to hold a part of the trade of the Central American states is owing to our having the only line of steamers touching at these ports. If we wish to build up and increase our trade, by all means we should afford every advantage to American lines of steamers, as they are the pioneers in securing and developing our trade and commerce.

JOHN M. WILSON, *Consul.*

UNITED STATES CONSULATE,
Panama, May 6, 1880.

1.—Statement showing the value of declared exports from the consular district of Panama to the United States during the year ending December 31, 1879.

Articles.	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.
Antiquities	\$45 00		\$100 00		\$145 00
Balsam		\$69 70			69 70
Cigars	2,160 00				2,160 00
Cocoa	844 00		3,815 30	\$439 32	5,098 62
Coffee	36 75	6,977 50	2,043 30	1,376 90	10,434 45
Copper	175 00		815 70		990 70
Ginger	108 00	379 00			487 00
Hides	24,982 30	19,234 40	19,610 40	28,592 41	92,419 51
Hops				250 00	250 00
Italian wine		18 00			18 00
Ivory nuts	46,036 90	28,966 90	50,087 30	16,762 25	141,853 35
Molasses		103 00			103 00
Opium	8,771 70	4,500 00	6,300 00		19,571 70
Pearls				35,000 00	35,000 00
Rubber	23,456 60	12,499 60	27,612 00	52,043 00	115,611 20
Sarsaparilla		51 30			51 30
Sea beans		70 00			70 00
Skins	669 90	816 00	2,339 60		3,825 50
Vanilla	96 80			3,147 90	3,244 60
Wood	4,014 27	2,385 30	1,206 40		7,605 97
Whale oil			18 00		18 00
Total	111,397 22	76,070 70	114,008 00	137,611 68	439,087 60

2.—Showing the number of tons of freight transported over the Panama Railroad during the years 1876, 1877, 1878, and 1879.

Months.	1876.	1877.	1878.	1879.
January	12,165.4	7,508.4	14,201.4	11,761.4
February	8,915.4	10,162.4	12,621.4	12,954.4
March	14,494.4	13,170.4	10,765.4	14,853.4
April	9,569.4	13,451.4	14,746.4	13,957.4
May	11,385.4	16,096.4	14,571.4	14,726.4
June	9,671.4	11,291.4	12,245.4	14,903.4
July	8,778.4	12,043.4	11,914.4	12,869.4
August	7,305.4	11,623.4	11,177.4	12,879.4
September	8,718.4	13,746.4	11,079.4	13,214.4
October	7,766.4	12,047.4	13,978.4	14,335.4
November	6,918.4	12,302.4	12,074.4	12,806.4
December	8,092.4	13,500.4	13,100.4	12,480.4
Total	113,781.4	146,942.4	152,477.4	161,743.4

3.—Showing principal productions of Central and South America received at and transported over the Panama Railroad during the years 1877, 1878, and 1879.

Articles.	1877.	1878.	1879.
Bark	bales.		
Cotton	20,169	40,500	39,653
Cocoa	4,775	13,576	40,026
Coffee	115,019	59,460	186,110
Indigo	233,131	191,561	351,070
Ivory nuts	11,884	7,438	9,531
Rubber	50,937	134,596	89,795
Sugar	16,516	16,360	16,711
	22,956	18,011	12,348

4.—Statement showing the number of sacks of coffee received at Panama during the months of January, February, March, and April, 1879, from the Central American republics, and how distributed.

Destination.	Number of sacks.
For Panama.....	3, 047
For South Pacific	5, 094
For Colon	37
For Europe by British steamers.....	106, 816
For Europe by German steamers.....	44, 122
For Europe by French steamers.....	36, 406
For United States of America by American and British steamers.....	24, 706
Total.....	219, 742

5.—Showing tonnage to and from New York for year ending December 31, 1879.

From New York.	Tons.	To New York.	Tons.
To Panama	3, 722½	From Panama	3, 362½
To Central America	4, 709½	From Central America	3, 206½
To South Pacific	7, 835½	From South Pacific	3, 600
To San Francisco	13, 210½	From San Francisco	17, 524½
To China and Japan	436½	From Mexico	180½
To Mexico	552½	Total	27, 874½
Total	30, 466½	Grand total	58, 341½

Total transported for 1879 to and from New York..... 161, 748½

6.—Showing number of passengers transported over the Panama Railroad during 1876, 1877, 1878, and 1879.

Months.	1876.		1877.		1878.		1879.	
	To Panama.	To Aspinwall.	To Panama.	To Aspinwall.	To Panama.	To Aspinwall.	To Panama.	To Aspinwall.
January	954	739	884	687	1, 074	771	1, 179	1, 015
February	1, 106	704	944	679	990	869	994	788
March	1, 232	1, 078	1, 021	835	1, 239	884	1, 093	1, 047
April	1, 175	1, 044	1, 164	853	1, 219	1, 195	1, 104	941
May	1, 344	1, 283	994	1, 040	1, 173	1, 030	1, 142	1, 124
June	1, 120	1, 221	1, 048	801	1, 142	988	1, 076	929
July	1, 173	894	873	841	1, 260	1, 035	1, 163	937
August	756	826	1, 059	868	1, 476	1, 156	994	898
September	1, 071	684	1, 078	790	1, 180	794	1, 072	902
October	948	751	1, 063	871	1, 287	764	1, 341	961
November	867	461	1, 007	663	1, 078	731	767	671
December	892	617	1, 141	926	896	750	941	640
	12, 638	10, 302	12, 276	9, 834	13, 954	10, 967	12, 866	10, 863
Total	22, 940		22, 110		24, 921		23, 729	

7.—List of steamships of the Pacific Mail Steamship Company of New York plying between Panama and San Francisco, Cal.

Class.	Name.	Tonnage.
Steamer	Alaska	3,452
Do.....	Colima	2,005
Do.....	City of Panama	1,490
Do.....	Chfua	3,536
Do.....	Dakota	2,135
Do.....	Granada	2,572
	Total	16,290

List of steamships of the Pacific Mail Steamship Company of New York plying between Panama and Central American and Mexican ports.

Class.	Name.	Tonnage.
Steamer	South Carolina	2,099
Do.....	Honduras	1,473
Do.....	Salvador	1,065
Do.....	Costa Rica	1,457
Do.....	Wilmington	840
	Total	7,094
	Grand total	23,424

8.—Names and tonnage of steamers of the Pacific Steam Navigation Company (English).

Name of vessel.	Tonnage.		Remarks.
	Net.	Gross.	
Pizarro	1,356	2,160	
Mendoza	1,356	2,160	
Coquimbo	1,131	1,831	
Ho	1,129	1,794	
Ayacucho	1,208	1,916	
Bolivia	1,215	1,925	
Lima	1,132	1,804	
Santa Rosa	1,139	1,819	
Amazonas	1,200	1,900	
Colombia	1,137	1,823	
Arequipa	662	1,065	
Cosma	357	592	
Lupe	231	298	
Sontuc		650	
Santiago	979	1,451	
Payta	997	1,344	
Islay	1,100	1,588	
Trujillo	978	1,449	
Oneya	1,117	1,597	
Tabaquilla	85	154	
Total	17,318	28,610	

TRADE OF RIO HACHA, UNITED STATES OF COLOMBIA, WITH THE UNITED STATES.

REPORT BY VICE-CONSUL DANIES.

Due note has been taken of instructions dated June 4, and I have the honor of complying with the request of the Department.

With regard to commerce in this section of Colombia, sufficiently rich

in elements to occupy a higher place in the commercial world, all I have to communicate to the Department offers scanty satisfaction.

The continual revolutions, the idleness of the natives, and the miserable ways of communication keep commerce and industry very backward.

All these inconveniences raise difficulties to the export of the great variety of wood, adapted to construction and dyeing purposes, in which the large and almost virgin forests of this country abound. They also keep back the exploration of some gold, copper, iron, and coal mines.

The coal mine, situated at about thirty miles from the town, is supposed to extend as far as Cape la Vela. Should the department desire a sample of this mineral, it will be forwarded.

The extension and importance of the other mines mentioned are unknown.

The principal articles of export to the United States are goat-skins (exclusively to the United States), dry hides, redwood, fustic, and divi-divi.

An idea may be formed of the value of the annual exportations from this place by adding yearly the sum of \$30,000 to the amount registered in the returns. This sum proceeds from shipments of goat-skins on the Goajira coast to the United States, via Curaçao, and under invoices certified by our consul at that island.

Owing to the actual depression of the products of this district in the United States markets, I venture to remark that no increase in the exportation is to be expected.

The imports into this port during the year 1879 amounted to the sum of \$144,560, of which \$6,650 proceed from direct importations from the United States. These figures do not represent, however, the true value of imports from the United States, as American goods are also introduced via Curaçao.

Almost all kinds of provisions consumed in the country are imported from the United States, besides large quantities of drillings and white shirtings.

The consumption of fine prints would greatly increase if our manufacturers could produce the variety in patterns equal to that of England. In short, trade between the United States and this country would be promptly augmented if an allowance on the import duties could be obtained from this government in favor of American manufactures.

N. DANIES, *Vice-Consul*.

UNITED STATES CONSULATE,
Rio Hacha, July 23, 1880.

AMERICAN TRADE IN THE UNITED STATES OF COLOMBIA.

REPORT, BY COMMERCIAL AGENT SMITH, OF CARTHAGENA, ON AMERICAN MANUFACTURES AND PRODUCTS SUITABLE FOR THE COLOMBIAN MARKETS.

I have the honor to give the following list of articles of American manufacture and product that, if but once properly introduced on these markets, would command a ready and profitable sale, viz:

Agricultural implements.—Sugar-cane plows, Cuban plows, rice-trenching plows, sugar and coffee mills, sausage-meat cutters, hay-cutters, straight-knives, hoes and rakes.

Rice machines.—This country, on the coast lands, produces annually

large crops of rice, which is thrashed out by a process that has been in use for two hundred years. A great want is felt by the planters for rice machines, such as separators, cleaners, and polishers.

The machines that have been sent to this section of the country are a failure. Let some American manufacturer produce a good machine that will give satisfaction to Colombian planters and he will sell hundreds.

In order that manufacturers may make experiments for producing a good machine, I will, upon application, send to their address samples of the rice grown in this country.

Glassware, lamps, &c.—All such ware is imported, there being no manufacturing in Colombia. As usual, Europe has enjoyed a monopoly of this branch of trade. Recently, however, several sample orders have been imported from the United States, and as they have given such satisfaction, on account of their durability, beauty of design, and cheapness, large orders are to follow. One of the largest importing firms here, who deal extensively in such wares, and who have heretofore made their purchases in France, have expressed their intention to give their future orders to the United States, so well pleased are they with the samples ordered from that country. Thus, step by step, are the American manufacturers superseding those of Europe.

There is always a good demand for cheap lamps, lanterns, and glassware and stoneware of every description. The duties on such goods are 15 cents per kilogram, gross weight of box and contents, and they should be packed for shipment in an economical manner.

Soaps.—Two firms in the United States have heretofore controlled this trade, notwithstanding the inferior articles they manufacture. The soap trade of this republic is immense. The reason why the two firms alluded to enjoy a monopoly is that they study the tastes of their customers, and put up their soaps accordingly. These firms cut their soaps into long narrow bars, the gross weight of the package being about fourteen pounds. It won't do to send boxes of fifty-six and sixty pounds gross weight.

Cutlery.—Table-knives, forks, and spoons, of the cheapest kind, sell well.

Household utensils, such as coffee-mills, basins, dish and sauce pans, kettles, sausage-fillers, can-openers, pots, and coffee-roasters would sell readily. There is no such article as a churn in the entire state, although it contains some of the finest grazing lands in South America, and has thousands of cows. If some manufacturer will send me a sample churn, I will show the natives how to make butter.

The butter imported from America in cans, when it reaches here, is rancid.

Builders' hardware.—There is a good sale for hammers, tools, saws, rules, chisels, bits, braces, gimlets, planes, saw-sets, hooks, hinges, &c.

Jewelry, clocks, &c.—Large quantities of plated jewelry are imported from France and England, but it is of a very inferior quality and is becoming unpopular.

Good plated ware will always be in demand. A great want is felt for a cheap clock. Nickel-plated watches sell rapidly.

Machinists' and blacksmiths' tools.—There is a limited demand for such articles.

Prints.—In a previous report I particularly dwelt upon the importance and magnitude of this trade, and upon the fact that it is entirely in the hands of the Manchester manufacturers. A variety of causes can be assigned for this state of the trade. Bad packing and goods not of

the standard length are, in my judgment, the reasons why not a single dollar's worth of American prints are sold.

The English prints for this market are of inferior qualities, less width than American goods, and heavily sized with pipe-clay, &c. Quiet and modest patterns have no sale. Purple is the favorite color. Let the American manufacturer pack his into bales of one hundred and twenty-five pounds' weight, cut the pieces also into the standard length of this country (thirty yards), and he will stand some chance of competing successfully with the English and French manufacturer.

I know of one Manchester firm that sold last year to Medellin merchants prints to the value of \$750,000. The English and French give long systems of credit, but, of course, charge a correspondingly high price for their goods.

American agents wanted.—The American manufacturers and jobbers should send out their agents and ascertain the facts for themselves, and I am confident that the venture will be attended with favorable impressions and results.

During a residence at this port of one year I have met with only one representative of an American manufacturing firm.

For some unexplained cause our manufacturers and jobbers prefer to do their business with Colombia through the medium of commission merchants in New York City. That our trade is retarded by such a course is an undeniable fact.

British, French, and German houses send numerous agents to this country who bring with them complete samples of the goods manufactured by their respective firms. Our manufacturers should make a direct and forcible effort towards enlarging and intensifying their trade with a country whose vast agricultural and mineral resources promise, at an early day, to be greatly developed.

Although in its infancy, this trade now amounts to nearly twenty millions annually.

EDMUND W. P. SMITH,
Commercial Agent.

UNITED STATES COMMERCIAL AGENCY,
Carthagera, June 18, 1880.

THE COCOANUT TRADE OF CARTHAGENA.

A REPORT BY COMMERCIAL AGENT SMITH.

The number of cocoanuts annually produced in the immediate vicinity of Carthagera is estimated at 4,000,000. Of this quantity about 1,000,000 are exported to the United States. Some of the plantations have 80,000 trees, but so carelessly are they cultivated that only about one-third of them on a walk bear fruit.

The nuts are large, rich in oil, and of delicate flavor. The cocoanut trade of this State is capable of rapid expansion if the fruiters of New York and Boston would but stop here instead of going one thousand miles to the windward and making their purchases.

By buying here instead of at Ruatan and on the San Blas coast, four weeks' voyage would be saved.

The prices of nuts range from \$12 to \$20 per thousand.

EDMUND W. P. SMITH,
Commercial Agent.

UNITED STATES COMMERCIAL AGENCY,
Carthagera, United States of Colombia, June 17, 1880.

STEAM COMMUNICATION BETWEEN COLOMBIA AND THE UNITED STATES.

REPORT BY MR. SMITH, COMMERCIAL AGENT AT CARTHAGENA.

I have the honor to report that the agent here of the British Royal Mail Steamship Company informs me it has been decided to withdraw its Plata line and run it between Colombian ports and New York. The company have been forced to do this on account of the extraordinary increase of exports to New York, and consequent falling off of shipments to Europe. Even the greater part of the exports to Europe are now being carried via New York. The reason for this is that by shipping this way the exporter has a choice of not only New York markets, but those of Hamburg, Bremen, Paris, Liverpool, or London.

To-day the carrying trade of these waters could be controlled by the United States if they would but give an American line a decent mail-service contract.

From my conversations with President Nuñez I have reason to believe that this government would give to any such line a handsome subsidy. Now is the time for an American steamship company to place its vessels in this trade. I am informed that the eight European lines engaged in this trade have entered into a combination to raise the freight tariffs.

An American line would be free from such an alliance, and could reap the benefits of an opposition to such a combination.

EDMUND W. P. SMITH,
Commercial Agent.

COMMERCIAL AGENCY OF THE UNITED STATES,
Carthagena, June 17, 1880.

STEAM COMMUNICATION AND TRADE BETWEEN THE UNITED STATES AND BRITISH GUIANA.

REPORT BY CONSUL FIGYELMESY, OF DEMERARA.

I have the honor to inform you that I noticed in the New York Herald of the 25th May, 1880, a paragraph relating to the ocean mail subsidy bill, recommending a line of steamers to carry mails between the United States, South America, and trans-pacific ports, West Indies, Central America and Mexico, of 3,000, 2,000, and 1,000 tons, with a subsidy of \$1,500,000 annually from the government.

Should this bill be passed, I beg that you will intimate to the Postmaster-General that whatever company should obtain the contract, to advise them to put themselves in correspondence with me, as I have had a conversation with the governor of this colony, also with the attorney-general, and they have promised to grant a subsidy of \$24,000 annually for monthly trips of such steamers to this port.

From the inclosed copies of dispatches No. 466, dated October 6, 1877, and No. 504, dated July 29, 1878, you will please observe how urgently I suggested then a line of steamers being put on this route, and pointed out how advantageous it would be to shippers, and important for trade at large, at this place.

There are nearly 1,400,000 cigars now, of German and Dutch manufacture, imported from England annually, and this is only one item of

import, which can be entirely in the hands of Americans, as samples of cigars have already been sent out here by a firm in the United States which are much superior to any German or Dutch cigars that can be bought. They are also more liked, and can be sold cheaper, if sent direct from the manufactory, as has already been ordered by Mr. Louis Trupley, a merchant here, since the 26th of January last, but he cannot obtain them yet on account of the difficulty in getting them shipped by sailing vessels, as you will find by the inclosed letter of Mr. John Fendrich, of Columbia. The fact is, shippers in the United States refuse to take cigars because their consignees here are the chief importers of German and Dutch cigars, and consequently outside freight of such goods interferes with their business at this port.

PH. FIGYELMESY, *Consul.*

U. S. CONSULATE,
Demerara, June 29, 1880.

Mr. Fendrich, of Columbia, to Mr. Tingley, of Demerara.

COLUMBIA, March 20, 1880.

DEAR SIR: Your order came duly to hand and contents noted, and have had the cigars ready to ship to you for the last four weeks. I wrote to Messrs. Leary, Craft & Co., and they reply that the owners of vessels will not allow them to ship cigars to Demerara, and they refused to take them. I also wrote to W. T. Whitney, esq., and he said that he would have a vessel to sail for Demerara in three days, which was too short a time for me to get our collector here, and to get the cases stamped and marked. I wrote to Mr. Whitney at once the time was too short to get the goods ready, and he should write me when he would have another vessel ready, but have not heard from him. When I found that I could not make any satisfactory arrangements to ship from New York, I went to Baltimore to see what could be done. I soon found out that parties who own the vessels do a trading business themselves at Demerara, and take no outside freights that interfere with their trade. Then I left the business in hands of a friend to see different parties, to see if I could find no way to get the goods shipped. I received a letter from my friend stating I should ship the goods in his care, and he would see that the goods were shipped, but I found two days' time was too short notice, hence I am sorry to say that I have given up all further efforts to try to ship the cigars.

I did not think I would have so much trouble and so little satisfaction from those shippers in New York and Baltimore. I presume there must be some kind of ring, and money in it, to get goods shipped to Demerara in large quantities. I suppose if I would get up two or three hundred thousand cigars, and give these shippers an interest in them, I would have no trouble to get them to ship to Demerara.

Yours, very respectfully,

JOHN FENDRICH.

L. TINGLEY, Esq.,
Georgetown, Demerara.

[The dispatches referred to by Consul Figyelmesy in the foregoing report are herewith published as being considered necessary for the amplification of the very important subject under review.]

Consul Figyelmesy to Assistant Secretary Seward.

I have the honor to inform you that a Canadian line of steamers is in course of being established, to start from New York, to touch at the following ports, viz: St. Thomas, Martinique, Barbadoes, Trinidad, and Demerara, and *vice versa*. The first of these steamers, the Bahamas, a vessel of about 840 tons, a very inferior boat, on her trial trip, arrived on the 23d instant with some freight, and started again on the following day.

I now beg to refer you to my dispatch No. 466, of October 6, 1877, in which I suggested the propriety and benefit that must necessarily result if an American line of steamers for taking freight, with suitable accommodations and comfortably fitted up



for passengers, were put on. I am confident that it would be very lucrative and advantageous to the American revenue.

Some time back I made intercession with the government here, and succeeded in getting a subsidy of \$24,000 placed on the estimate for such a line; but as that line was not put on, the provision was subsequently stricken off the estimate. I have no doubt, however, that I would be able to get the subsidy replaced if the matter were carried into effect.

Recently I have been receiving from some establishments in the United States newspapers through which I see that a few merchants here have commenced to import from there cotton goods, boots, shoes, hardware, &c. But vessels regularly trading here will not bring out freight, and, therefore, it is difficult, in the event of orders being sent, to get out the goods. If a line of steamers were put on this route, touching at certain ports in the West Indies, all such difficulties would be overcome. Under these circumstances I again urgently suggest that this matter be seriously taken into consideration.

The advantages that would be offered by such a line must be looked at in several ways. I am aware that parents and guardians, when the voyage between this place and the United States can be performed in a much shorter period than going to England, would prefer sending their children to the United States to be educated, especially when they themselves can so easily pay a flying visit to their children much quicker than by going to England. If a bazaar, properly conducted by some experienced American, were established here for the sale of their manufactured goods, such as cotton cloths, cutlery, hardware, boots, shoes, hollow-ware, &c., I have not the slightest doubt that it would yield a very profitable return. I am sorry to state that from the late severe drought the sugar crop for this year, it is estimated, will fall short of the yearly average 40,000 hhds., it generally being 120,000 hhds.

Consul Fygelmesy to Assistant Secretary Seward.

I have the honor to acknowledge the receipt of circular dated August 16, 1877, relating to the question of methods by which trade with the United States can be most judiciously fostered with other countries.

In reply, I have to intimate that the only products and manufactured articles exported from here are sugars, molasses, rums, and timbers, while this country is solely dependent on the United States for its supplies, viz, broadstuffs, provisions, horses, mules, and sheep, which always find a ready market. A large field is now open for cotton goods, and I consider that it would be more advantageous to ship such merchandise direct to this port than as it is now done, to England and from thence to this colony. The cottons of American manufacture imported here from England are of the following brands or marks: "King Philip," "Lo," "G. B. Dwight," "Star," "Mount Hope," and "New York Mills."

The merchants, I am aware, would send on orders to the United States for such goods; but the vessels coming from the United States to this port are all consigned to such merchants as are in the trade there, and consequently they will not take freight.

I have no doubt if a regular line of steamers was put on this route, it would prove very lucrative to the trade being carried on advantageously to both the sellers and purchasers.

Latterly hollow-ware, cutlery, and tradesmen's tools have been imported here from Philadelphia and other parts of the United States; also, leather, boots, shoes, &c. These articles have always met with ready purchasers.

I shall not fail to communicate whatever information on these matters may hereafter come to my knowledge.

EXPORTS OF NITRATE OF SODA FROM IQUIQUI, PERU.

REPORT BY CONSUL MERRIAM.

I herewith inclose a tabular statement of the amount of nitrate of soda exported from Iquiqui since the first shipment was made in 1830, to December 31, 1879, together with the average price in Liverpool for the past thirty-three years.

100 CONTINENT OF AMERICA: MEXICO, CENTRAL AND S. AMERICA.

This table has been compiled with great care, and will, no doubt, be regarded as a valuable addition to the statistics of an industry which is one of the most important of the times.

I shall in future send quarterly and annual statements of amounts exported. I shall endeavor, by a subsequent steamer, to send a statement of the amount exported to the United States and to the different countries in Europe during the past fifty years, with the export duties imposed in different years, and any other items that I may be able to collect in order to make the history of the industry complete.

J. W. MERRIAM.

CONSULATE OF THE UNITED STATES.

Iquiqui, Peru, November 6, 1880.

Exportation of nitrate of soda from Iquiqui, Peru, from 1830 to December, 1879, inclusive.

Years.	Number of vessels.	Quintals, Spanish, of 100 pounds.	Price in Liverpool per cwt. of 112 pounds.	Years.	Number of vessels.	Quintals, Spanish, of 100 pounds.	Price in Liverpool per cwt. of 112 pounds.
			s. d.				s. d.
1830.....	4	18,700		1856*.....	98	811,603	18 6
1831.....	12	40,385		1857*.....	123	1,095,833	18 0
1832.....	15	52,500		1858*.....	124	1,229,240	18 0
1833.....	26	92,700		1859.....	140	1,570,248	15 3
1834.....	36	147,800		1860.....	120	1,379,248	12 6
1835.....	39	140,399		1861.....	118	1,355,691	12 9
1836.....	45	158,534		1862.....	147	1,625,017	12 9
1837.....	38	165,389		1863.....	144	1,540,963	14 6
1838.....	31	129,610		1864.....	168	1,990,587	14 0
1839.....	38	149,576		1865.....	200	2,442,450	12 6
1840.....	45	227,362		1866.....	174	2,187,685	10 3
1841.....	52	278,488		1867.....	199	2,559,327	10 6
1842.....	65	359,918		1868†.....	134	1,905,508	15 0
1843.....	67	309,317		1869.....	183	2,507,652	15 0
1844.....	74	386,101		1870*.....	226	2,945,413	15 3
1845.....	70	376,239		1871*.....	255	3,605,906	16 3
1846.....	66	390,148		1872.....	308	4,428,764	15 10
1847.....	70	383,087	11 0	1873.....	417	6,263,767	14 2
1848.....	75	485,089	11 9	1874.....	332	5,583,360	12 3
1849.....	69	430,102	13 9	1875.....	427	7,191,114	11 9
1850.....	61	511,845	14 0	1876.....	393	7,059,764	11 6
1851.....	89	609,406	13 3	1877.....	240	4,521,654	14 0
1852.....	93	562,989	15 9	1878.....	290	5,909,213	14 6
1853*.....	124	806,241	18 3	1879.....	108	2,065,350	14 8
1854*.....	101	720,465	18 0				
1855*.....	121	936,888	18 0		6,614	81,910,019	

* War in Europe.

† Earthquake.

Total shipments during 33 years, 3,723,182 tons of 2,200 pounds each.

Average price in Liverpool during the last 33 years, 14s. 4d. per cwt. of 112 pounds.

TRADE OF THE UNITED STATES WITH MEXICO, CENTRAL AND SOUTH AMERICA.

REPORT BY MR. BAKER, MINISTER RESIDENT AT CARACAS, VENEZUELA.

It being in some special sense one of the parts of the commercial policy of the United States to extend its trade with Mexico, Central and South America, I have thought it might be well to present a statement of the recent status of our trade with this group of countries, under the

relations of domestic exports, imports, and balance of trade. But in order that such a statement should carry with it a proper rational value, it should be placed in comparison with all the rest of the foreign trade of the United States, viewed under like relations, and grouped into great divisions as nearly natural as may be. I have, therefore, constructed four tables: the first for Europe; the second for Mexico, Central and South America; the third for the West Indies, and the fourth for all countries and ports not included in the three preceding tables; thus embracing in one view, and by the great groups stated, the entire foreign trade of the United States throughout the world, under the relations of domestic exports, imports, and balance of trade. It will be seen that the first three of these divisions are naturally enough chosen, while the fourth has that arbitrariness which belongs to residuary quantities.

In constructing these tables I have used for the first and second columns the data supplied by statement No. 27, on pages 189-191 of the quarterly report of the Bureau of Statistics (Treasury Department), No. 2, 1879-'80, I myself making the proper computations for the balances of trade which appear in the third and fourth columns and summing all the columns of all the tables. This I have done with much care, and venture to hope that no very important error will be found in the tables as I send them.

I.—Table showing the values of domestic exports from, and imports into, the United States, and the resulting balances of trade, in respect to all the countries of Europe, for the year ending December 31, 1879.

To and from.	Domestic exports.	Imports.	Balance of trade in favor of the United States.	Balance of trade against the United States.
Austria.....	\$2,377,707	\$354,069	\$2,023,638	\$395,105
Belgium.....	31,025,397	6,346,289	24,679,108	
Denmark.....	2,741,262	104,075	2,637,187	
France.....	92,754,795	56,267,342	36,487,453	
Germany.....	50,725,353	40,479,876	10,245,477	
England.....	317,063,500	130,624,683	186,408,817	
Scotland.....	26,557,012	11,371,157	15,185,855	
Ireland.....	57,449,413	2,465,502	54,983,911	
Gibraltar.....	1,975,061	10,397	1,964,664	
Greece.....	151,079	546,184	-----	
Italy.....	9,916,021	8,182,554	1,733,467	
Netherlands.....	15,486,709	4,883,645	10,603,064	
Portugal.....	4,753,393	564,497	4,189,396	
Russia on the Baltic and White Seas.....	14,365,499	228,882	14,136,617	
Russia on the Black Sea.....	948,861	184,200	764,661	
Spain.....	14,053,164	4,281,096	9,772,068	
Sweden and Norway.....	2,152,686	102,517	2,050,149	
Turkey in Europe.....	2,680,070	-----	2,680,070	
Total.....	647,147,462	266,996,965	380,545,602 395,105	395,105
Aggregate balance in favor of the United States.....	-----	-----	380,150,497	

102 CONTINENT OF AMERICA: MEXICO, CENTRAL AND S. AMERICA.

II.—Table showing the values of domestic exports from, and of imports into, the United States, and the resulting balances of trade, in respect to Mexico, Central and South America, for the year ending December 31, 1879.

To and from.	Domestic exports.	Imports.	Balance of trade in favor of the United States.	Balance of trade against the United States.
Mexico	\$5,671,134	\$6,090,574	.....	\$419,440
Central American States	1,332,039	2,285,098	.....	953,059
British Honduras	291,767	274,706	.....	.....
Argentine Republic	2,163,820	3,892,865	\$17,057	1,729,045
Brazil	8,283,768	40,585,720	.....	38,302,952
British Guiana	1,055,390	817,403	837,987	.....
Dutch Guiana	212,422	229,811	.....	17,189
French Guiana	67,418	14,103	53,815	.....
Colombia	5,256,879	6,908,206	.....	1,651,327
Chili	1,023,070	623,898	399,172	.....
Peru	1,168,307	770,473	397,834	.....
Uruguay	842,731	2,329,254	.....	1,486,523
Venezuela	2,130,503	5,312,076	.....	3,181,573
All other countries and ports in South America	92,754	67,607	25,247	.....
Total	30,190,998	76,201,494	1,730,612	47,741,108
Aggregate balance against the United States .....	.....	.....	.....	1,730,612
.....	.....	.....	.....	46,010,496

III.—Table showing the values of domestic exports from, and of imports into, the United States, and the resulting balances of trade in respect to the West Indies, for the year ending December 31, 1879.

To and from.	Domestic exports.	Imports.	Balance of trade in favor of the United States.	Balance of trade against the United States.
British West Indies	\$6,324,640	\$3,904,439	\$2,420,211	.....
Danish West Indies	765,754	316,675	419,079	.....
Dutch West Indies	569,088	843,188	.....	\$274,100
French West Indies	1,651,131	2,244,347	.....	573,216
Cuba	11,429,902	57,738,239	.....	46,308,337
Haiti	3,163,290	3,255,642	.....	92,343
Porto Rico	1,972,981	4,150,813	.....	2,177,831
San Domingo	740,234	456,411	283,823	.....
Total	26,617,029	72,939,743	3,123,113	49,425,827
Aggregate balance against the United States .....	.....	.....	.....	3,123,113
.....	.....	.....	.....	46,302,714

IV.—Table showing the values of domestic exports from, and of imports into, the United States, and the resulting balances of trade, in respect to all countries and ports not included in the three preceding tables, for the year ending December 31, 1879.

To and from.	Domestic exports.	Imports.	Balance of trade in favor of the United States.	Balance of trade against the United States.
China.....	\$2, 228, 427	\$620, 063, 313	.....	\$17, 834, 886
Greenland, Iceland, and Faroe Islands.....	.....	79, 661	.....	79, 661
Miquelon, Langley, and Saint Pierre Island ..	277, 943	3, 901	\$274, 042	.....
French East Indies.....	21, 050	.....	21, 050	.....
French possessions in Africa and adjacent islands.....	323, 563	210, 291	107, 272	.....
French possessions, all other.....	259, 218	165, 124	94, 094	.....
Nova Scotia, New Brunswick, and Prince Edward's Island.....	2, 814, 267	3, 537, 773	.....	1, 023, 506
Quebec, Ontario, Manitoba, and Northwest Territory.....	20, 666, 252	23, 247, 684	.....	2, 581, 432
British Columbia.....	973, 493	967, 121	6, 372	.....
Newfoundland and Labrador.....	1, 207, 060	302, 001	964, 999	.....
British East Indies.....	1, 456, 979	14, 736, 140	.....	13, 279, 161
Hong-Kong.....	3, 226, 374	1, 993, 837	1, 232, 537	.....
British possessions in Africa and adjacent islands.....	1, 994, 624	1, 110, 398	884, 226	.....
British possessions in Australasia.....	5, 173, 868	790, 457	4, 383, 411	.....
British possessions, all other.....	188, 783	111, 341	77, 442	.....
Hawaiian Islands.....	2, 108, 523	3, 635, 506	.....	1, 427, 043
Japan.....	2, 500, 211	14, 502, 137	.....	12, 001, 926
Liberia.....	218, 415	97, 213	121, 202	.....
Dutch East Indies.....	2, 351, 952	4, 545, 722	.....	2, 193, 770
Azore, Madeira, and Cape Verd Islands.....	447, 548	118, 827	328, 721	.....
Portuguese possessions in Africa and adjacent islands.....	63, 751	.....	63, 751	.....
Russia, Asiatic.....	113, 735	91, 295	22, 440	.....
Spanish possessions in Africa and adjacent islands.....	190, 000	114, 040	81, 960	.....
Spanish possessions, all other.....	10, 387	5, 568, 710	.....	5, 558, 323
Turkey in Asia.....	224, 097	538, 793	.....	314, 696
Turkey in Africa.....	451, 315	100, 207	351, 108	.....
All other countries and ports in Asia, not elsewhere specified.....	.....	38, 960	.....	38, 960
All other countries and ports in Africa, not elsewhere specified.....	1, 042, 124	721, 779	320, 345	.....
All other islands and ports, not elsewhere specified.....	101, 307	1, 102	100, 205	.....
Totals.....	50, 691, 266	97, 599, 453	9, 435, 177	56, 333, 364 9, 435, 177
Aggregate balance against the United States.....	.....	.....	.....	46, 898, 187

Supplementary table, showing in one view the balances of trade for and against the United States, by the four great divisions set out in the preceding tables, for the year ending December 31, 1879.

Divisions.	Balance of trade in favor of the United States.	Balance of trade against the United States.
Europe.....	\$380, 150, 497	.....
Mexico, Central and South America.....	.....	\$40, 010, 496
West Indies.....	.....	40, 302, 714
All other countries and ports.....	.....	46, 898, 187
Totals.....	380, 150, 497 139, 211, 397	139, 211, 397
Net balance of trade in favor of the United States.....	240, 939, 100	.....

REMARKS.

1. It will be seen that the preceding tables have the advantage of exhibiting the recent status of our foreign trade by the four great divisions into which it is separated, and under the relations of domestic exports, imports, and balance of trade—each division being subdivided into its appropriate elements—thus furnishing the ready means of placing in comparison the standing of our trade, either by the divisions themselves, or by the separate parts of each division.

2. By consulting Table I, in connection with the three following tables, it will be observed in sharp relief how relatively important and compensatory is the present standing of our trade with the first division (Europe) as compared with any or all the other divisions.

2. It will be seen how nearly equal are the balances of trade against the United States for all the three divisions aside from that of Europe, a proximate equality of adverse balances of which I had no suspicion before constructing the tables.

4. It will be observed that the most important adverse balance in the second division (Mexico, Central, and South America) is that of Brazil, followed by the much less but relatively considerable one of Venezuela; that Cuba leads the third division (the West Indies) with a very large adverse balance, and that China, Japan, and the British East Indies exhibit the largest adverse balance in the fourth or residuary division.

5. It will be observed that the regions of adverse balances are those of sugar, coffee, tea, cocoa, spices, &c., and that the true problem for our manufactures and commerce is to overcome these balances, not alone for Mexico, Central, and South America, but also for the West Indies, China, Japan, the British East Indies, and other countries from which we import such commodities.

JEHU BAKER,
Minister Resident.

LEGATION OF THE UNITED STATES,
Caracas, September 28, 1880.

COST OF MATERIAL FOR HOUSE-BUILDING IN CARACAS, VENEZUELA.

REPORT BY MINISTER BAKER, OF CARACAS.

In forming a just idea of the comparative facility for material improvement in any given locality, I reckon the price of building materials to be a matter of much importance. Seeking, therefore, to ascertain the average cost at Caracas of a number of the principal articles which are used in house-building, I have obtained the following data from Mr. O. G. Jackson, an English carpenter and builder doing business at this place, and who has lived for a time in the United States. With a view to intelligent appreciation, and at the cost of considerable figuring, I have reduced the values, as stated by him in *pesos*, to the value of United States gold.

1. *Burnt bricks*.—Three sizes of these are used, all of the same superficial extent, 6 by 12 Spanish inches; the first, however, being 1, the second $1\frac{1}{2}$, and the third $2\frac{1}{2}$ Spanish inches in thickness.* Their respective average prices per thousand, delivered at the place of building, are

* Eleven English inches equal 12 Spanish.

stated to be: first size, 18 *pesos*, or \$13.86; second size, 22 *pesos*, or \$16.92; third size, 28 *pesos*, or \$21.54.

2. *Panelas*.—These are used for flooring, and may be regarded as a species of brick. Two sizes of them are used, the one 9, the other 12 Spanish inches square, and both 1 Spanish inch thick. Their respective average prices per thousand, delivered at place of building, are stated to be: first size, 25 *pesos*, or \$19.23; second size, 36 *pesos*, or \$27.69.

3. *Unburnt bricks, adobes*.—Of these there are two sizes, the one being 8 by 15 Spanish inches in surface and 3 thick, the other 9 by 18 and 4 thick. Their respective average prices per thousand, delivered, are stated to be: first size, 21½ *pesos*, or \$16.35; second size, 27½ *pesos*, or \$21.15.

4. *Rough stone*.—The price of this material, delivered at place of building, is stated at 2½ *pesos*, or \$1.73, for a measure of 1 *vara* square by ½ *vara* in thickness.*

5. *Lime and sand*.—Lime is delivered at the place of use for 13 *pesos*, or \$10, per *cahiz*, a measure which is stated to be about 6 barrels, which would be about \$1.67 per barrel.

Sand seems to be sold by no exact measure, but is delivered at five-eighths of a *peso*, or 48 cents, per cart-load, which, as the cart-beds here are quite small, is stated at about two wheelbarrows full.

It would appear that the lime is of inferior quality, since I am told by Mr. Jackson that it is a general rule to use two parts of lime and three of sand to make mortar as strong as it is when composed of one part of lime and four of sand in the United States.

6. *Tiles*.—The usual form of these, with which nearly all the houses in Caracas are covered, is that of a plate curved before burning in a direction parallel with its length. They are 16 Spanish inches long and 9 inches across their concave face. Their average price per thousand, delivered on the ground, is stated to be 30 *pesos*, or \$23.08.

7. *Lumber*.—Of the native woods, it appears that *cedeo amargo* (bitter cedar) is proof against a certain boring insect, which is the pest of many varieties of wood in this country. This wood, although bearing the name of cedar, and doubtless properly so, as being one of its species or varieties, is very different from the northern cedar, as being less hard, compact, and fine in its grain. The prices here per thousand feet, delivered, of boards made of this wood, are stated to be: ½ inch boards, 125 *pesos*, or \$96.15; 1-inch boards, 187½ *pesos*, or \$144.23.

I understand from Mr. Jackson that boards made of other native woods rate at about 125 *pesos*, or \$96.15 per thousand feet, delivered.

As to foreign lumber, white and pitch pine are brought here from the United States. The prices of these per thousand feet, delivered, are stated to be: white pine, 100 *pesos*, or \$76.92; pitch pine, matched flooring, 125 *pesos*, or \$96.15; 1-inch boards, 130 *pesos*, or \$100; 1½ and 2 inch boards, 145 *pesos*, or \$111.54; 3-inch boards, 155 *pesos*, or \$119.23.

It may be proper to add, in connection with these enormous prices for lumber at this place, that Mr. Jackson states that the average freight on lumber from La Guayra to Caracas is about 40 *pesos* per thousand feet. It comes strapped on carts drawn by oxen or burros over a winding mountain road about 21 miles in length, and which at times is in very bad order from protracted rains.

I cannot, of course, vouch for the exactitude of the preceding data, but I think they may be accepted as substantially and practically proximate, and I conclude from them—as I have understood independently—

* The *vara* is 33 English inches.

that the materials for house-building, quality for quality, are much more costly here than in the United States.

JEHU BAKER,
Minister Resident.

LEGATION OF THE UNITED STATES,
Caracas, September 7, 1880.

PETROLEUM DEPOSITS IN VENEZUELA.

REPORT BY COMMERCIAL AGENT PLUMACHER, OF MARACAIBO.

Those parts of the country lying between Rio Zulia and Rio Catatumbo and the Cordilleras abound in asphalt mines and fountains of petroleum; the parts most south abound most in the latter.

There is in that place a chain of hills, slightly elevated, and stretching from east to west for a distance of more than 60 kilometers, and then losing itself between Rio Tara and Rio Zulia.

All along the base of this chain, to the north as well as to the south, are found innumerable fountains and deposits of petroleum of good quality. To this coal formation corresponds also the phenomenon already described, and situated in the country that lies between Rio Tara and Zulia, and which, in my opinion, is the most extraordinary that there is in the republic.

At a little more than 7 kilometers' distance from the confluence of the rivers Tara and Sardinarte there rises a sand-bank, of about 8 or 10 meters in height, and it extends for about 25 or 30 meters. On its surface is visible a collection of cylindrical holes, apparently artificially made, and of different diameter, through which gush out with violence streams of petroleum mixed with boiling water, causing a noise which might be produced by two or three steamers in blowing off steam. This noise may be heard at a considerable distance, and the column of vapor which ascends therefrom would also be perceptible a great way off if the thickness of the forest did not obstruct the view.

All that land over a great distance abounds in petroleum, and it is wonderful what a coolness and luxuriance the forest which shades it preserves. The few who have visited that place in search of balsam copaiva have given it the name of "El Infierno."

Finding himself during his travels in "Labazar de las Palmas," Dr. Edward McGregor obtained some information concerning this curious phenomenon, and he undertook a costly voyage with the object of reconnoitering it. He had the good fortune to meet with it, and he examined it carefully. On his return to this city he immediately addressed a note to the government of the state, communicating the discovery of the said phenomenon, and at the same time transmitting all the details relating to it. Among other things he said that from one only of these streams, notwithstanding the difficulties of the position, he filled in 42 seconds a vessel containing 15 bottles, or as fast as 4 gallons per minute, or 240 gallons per hour, or 5,760 gallons during the 24 hours of the day.

The respectability of Dr. McGregor prevents me from doubting that statement. But even supposing it to be exceedingly exaggerated, there would still remain the indisputable fact that a number of these petroleum fountains ought to produce daily an enormous quantity of that fluid.

There is another fact worthy of attention alongside of the phenomenon just described. There exists in that district a multitude of fount-

ains and deposits of petroleum and asphalt, but towards the Rio Tara, Catatumbo and Zulia, which form the boundary of those regions, there appears no stream of petroleum.

It is to be supposed, and Dr. McGregor believes it probable, that the petroleum and boiling water that issue from the above-mentioned fountains lose themselves as quick again in the loose calcareous grounds on which the fountains rise.

The petroleum which I brought as a sample was very good quality, being of .083°, which is the required density in the British markets of the petroleum imported from the United States of America and approved of there.

I ought also to state here that up to the confluence of the Tara and Sardinarte the river is navigable during all seasons of the year for flat-bottomed craft of 40 to 50 tons capacity.

On considering the enormous quantity of inflammable gas that must necessarily escape from these fountains and deposits of petroleum which I have described, there arises the idea that the same gas may have a direct influence on the production of the phenomenon which has been known since the conquest, and which is generally called "El farol de Maracaibo." This phenomenon consists in constant lightning without explosion, which is observable from the bar at the entrance of the lake of Maracaibo, close to the island of Bajoseco, in a southerly direction, and which Colonel Codazzi, in his geography, attributes to the vapors which ascend from the Cienega de agua caliente, situated at more than a league to the east of the mouth of the Rio Escalante.

There is also an incident, which, if correct, would go far to confirm my indication. Several mariners assured me that for a long time they did not see the "Farol." As the conditions under which the phenomenon called "El Infierno" was found are well known, it would be of great interest to ascertain whether the earthquake of Cucuta, the effects of which were felt as far as the Rio Catatumbo and the southern coast of the lake, has made any considerable alteration, or caused the total destruction of the phenomenon. If this latter be the case, there would not remain the shadow of a doubt that the said apparition owed its origin to the inflammable gas, which escaped from "El Infierno" and from the numerous fountains and deposits of petroleum which I have already mentioned, for this reason—that the "Cienega de agua caliente" is found to be in the same condition now as before the said earthquake.

Beyond the Rio Zulia, in the upper part of the department of Colon—that does, however, not extend to the foot of the Cordilleras—I have heard of no deposits of asphalt or petroleum, in spite of all the inquiries I made to obtain any reliable information on the subject. Neither are any coal mines found there; but this is by no means the case in the part of this hydrographical hollow which continues towards the south, and I have been informed by persons of truth and respectability that the valleys of Cucuta and the territories of the State of Tachira abound in coal mines.

Near San Antonio, in the ravine called "la Carbonery," exist some of considerable size, from which is frequently dug coal for the use of the smiths' forges in that place, and at the foot of the Cordillera, on the northern side, there exist a considerable number of coal mines and asphalt deposits, and also some fountains of petroleum.

In the territory of the department Sucre, just opposite Gibraltar, at the foot of the mountain line, a large quantity of coal and asphalt is found.

Among the samples of coal which I have been able to examine during

my residence in the State of Zulia, I have only met with one true specimen of "lignite," and that came from this department, and was sent to me by Don Lucio Gutierrez, a Spanish subject, and now a rich landowner of this department. This specimen of lignite was found near the Cordillera and in the direction of the Rio Torondoy, and its quality deeply interested me. I had the honor to present a specimen of that class to General Jacinto Gutierrez, and, as I have since understood, he sent it to Caracas to be examined and tried.

In this same Cordillera exist several fountains of a substance commonly called mineral, which I understand is very distinct from both petroleum or asphalt in their different grades of condensation. It is a liquid of a black color, of little density, and strongly impregnated with carbonic acid, which it transmits to the water that invariably accompanies it. The deposits of this liquid are found in various directions at the foot of the mountain spurs of the Cordillera, and its identity with that I saw in the United States of America, springing from great deposits of anthracite, induces me to believe it probable that some of these mentioned mountain spurs may also contain formations of the same mineral.

To the east of the Rio Pao, which divides on that side the State of Trujillo from that of Zulia, the northern branch of the Cordillera slopes rapidly down until it loses itself in the plains of Ceniza. The northern basis of this mountain is not much known, and I know not if it contains any coal, but between Escuque and Bettijoque, in the town of Columbia, petroleum wells of an inferior quality are abundant; it is gathered by the laborers in handkerchiefs, which, when thoroughly saturated with the liquid, are pressed into the vessels which they carry for that purpose. It is used for burning in the houses of the poor, and also in some farm-houses. At one time this petroleum formed a matter of great interest and hope to some people, who planned the working of it in the years 1824 and 1826. They believed it to be a substance totally unknown, and they called it the oil of Columbia, which name was derived from the place where it was found. It attracted the attention of many during that time, and they sent samples of it to England, France, and the United States, but it did not produce the expected results. At that time the invention—which is due to an engineer of the United States—of extracting from petroleum, by means of distillation, those valuable products known as benzine and kerosene, was yet unknown.

The plains of Ceniza also abound in asphalt and petroleum. The most considerable of these deposits is found at about 12 kilometers to the east of St. Timoteo, and forms an extensive lake of both substances, on the western bank of which the asphalt is worked which they bring to this city, and which is commonly called asphalt of San Timoteo. It is of a greater density than any other that has been seen coming from that part of the country, and as there is good anchoring ground near the lake, I have no doubt that profitable results may be obtained from a regular exploitation.

In the districts that lie between the plains of Ceniza and the Rio Mene many deposits of asphalt are found. The last and most considerable of them is that of the Cienega de Mene, between la Rita and Cabimas. It is scarcely of any depth, and in its bottom is found a compact bed of asphalt, which is only used to paint the bottoms of vessels to keep off the barnacles.

To the east of the lake the river Mene appears to be the boundary of all these deposits of petroleum and asphalt. At any rate I am not aware of the existence of any other ones towards the north of that line, neither do I know whether there is any coal in the plains of Ceniza, or in the

districts lying between the eastern coast of the lake and the Cordilleras del Empalado.

To the north of the Empalado there appear again in different points in the district Casigua, State of Falcon, wells of petroleum; but I have no direct knowledge of their extent and quality.

The foregoing report would suffice as regards the information concerning the distribution of the coal and asphalt and petroleum sources around the lake of Maracaibo, but I think it important to add some observations of great value, in my opinion.

It is a fact well established by the science of mineralogy that naphtha and petroleum, as well as the substances known by the names of bitumen, mineral pitch, pissasphalt, resin, and asphalt, which is of greater density, all originate from great accumulations of vegetable matter deposited in different places in consequence of the inundations from which this earth has suffered.

In the process of time a constant gathering of mineral substances has covered those vegetable deposits with strata piled one above the other, finally remaining at a considerable distance from the surface of the ground. They are carbonized by the slow and constant action of the heat of the ground, assisted by the great pressure of the strata which covers them.

Naphtha is produced by the carbonizing of these deposits, as also petroleum and the other liquids, more or less bituminous, which, in consequence of their exposure to the heat and the pressure of the strata above them, force their way up over all, until they reach the surface of the ground, where they undergo a series of transformations. The action of the air and of the sun's heat slowly deprives them of the lighter substances which they contain, resulting in a gradual and progressive condensation, which finally forms the dry and compact asphalt, similar in its properties to the lignite.

In this lake district exist places where one may, with some amount of attention, follow with the naked eye the above indicated transformations, and, after examining all the samples of coal that during eight years have been brought under my notice, I believe that I may venture to assert that, with the exception of the compact lignite before mentioned, produced near the river Torondoy, all the rest are asphalt, in various degrees of condensation.

The driest and most compact of all is that of Tule; and after the many trials to which I have submitted it I can with all sincerity classify it amongst the coals of the best quality, and serviceable for all those purposes for which the best lignites are advantageously employed.

We must bear in mind that the great quantities of naphtha, petroleum, and bitumen that rise above the surface of the ground represent but a small portion in comparison with that which is contained in the deposits of carbonized vegetable matter from whence they issue. Thus it is that, however great the riches that are manifest on the surface of this lake region may appear to be in the innumerable fountains and deposits of petroleum, bitumen, and asphalt, those riches cannot be comparable to those contained in the immense coal deposits from which these substances proceed, and which deposits must exist at more or less depth in the same district.

This conviction, which is derived from the nature and circumstances connected with the inexhaustible fountains of petroleum, asphalt, and bitumen and coal already mentioned, proves that I am correct in the opinion, that very few countries on the globe possess such riches in mineral substances as the regions around the lake of Maracaibo, and if

these coal deposits, that really form the greatest wealth of the State, have not yet been discovered, it is owing to the fact that by far the greater part of its territory is to-day in the wild and desert state in which it was found at the Conquest.

The government has never interested itself with its explorations, neither have any other particular individuals done so, although many may have possessed the means and the knowledge adequate to such an undertaking.

All the circumstances connected with the geological formation of this extensive lake region induce us to believe that it is the result of a submersion occasioned by one of those terrestrial revolutions which in former times destroyed the solid surface of the earth, causing at that time considerable alterations of more or less magnitude.

It appears probable that this submersion may have taken place not only in that part which now constitutes the lake of Maracaibo, but that it may have extended to the north, including the whole extent of the territories occupied now by the Gulf of Maracaibo and the Sea of the Antilles from the shore of the present coast to beyond the neighboring isles. The violent breaking in of the waters of the sea, which is supposed to have been occasioned by the sudden sinking of the ground, stripped this immense deluged country of all the vegetation that covered it, transporting a considerable portion of it to the bottom of this lake region, and depositing it at the foot and in the direction of the Cordilleras, which inclose it. Possibly, from causes which cannot be satisfactorily explained in the absence of any knowledge we possess of certain particulars connected with the irruption of the waters, some of these vegetable deposits may have found their way to a considerable distance from the said mountain ridge that formed a barrier against their further advance; but I am certain that the greater part of them are to be found in the direction here indicated, that being the place where they must be looked for, particularly to the south and west of this lake. The field of compact liquid which is in the department Gibraltar and the numerous fountains of petroleum, already described, situated to the south of the Catatumbo, all serve to confirm my opinion. It is also probable that many of these deposits may have arrived at so high a degree of carbonization that they may be in reality what is called stone-coal, and in the same manner it abounds in lignite, more or less compact, from that of a very light quality to that of the shining fossil.

Those who have but a slight knowledge of mineralogy generally ignore that some of the wisest of men have not yet been able to give a scientific classification of the different sorts of coal. Mr. Bendant, in his excellent elementary treatise on this science, expresses himself in the following manner: They cannot, in reality, form any distinct mineralogic species, but considering their importance in the different branches of industry next to the diamond, we ought to describe them by the names under which they are generally known in their uses, both in private life and in commerce. The eminent English chemist and mineralogist, Dr. Ure, in his invaluable Dictionary of Arts, Manufacture, and Mines, gives an extensive nomenclature and description of all the different species of coal which have been worked in England and other countries, and notwithstanding all that work, which reveals a long study and deep understanding, it is far from satisfying the condition of a scientific classification of these substances.

If we except the anthracite and a few others which are curiously carbonized, all the others, the stone-coal included, proceed from accumula-

tions of vegetable matter which has undergone a series of modifications by which particular combinations of its elements were formed.

I make this explanation so as to observe that we ought to be very cautious in giving our opinion on those mineral substances unless we have carefully examined them, for we are apt to fall into grave errors in classifying them when they fall into our hands for the first time.

In some parts of this report I have used the word carbonate in speaking of the riches of this lake region in petroleum, asphalt, and coal, all of which are substances belonging to the important group of coal, for it could not be presumed that they alone constitute the above-mentioned riches. To this group also belong the diamond, the graphite, and coal of every known kind; bitumen, asphalt, and other resinous minerals; naphtha, petroleum, carbonic acid, and the extensive nomenclature of the different carbonates.

In order to avoid the troublesome repetition of the names of the few mineral substances which constitute the exclusive object of this communication, I have preferred to incur the charge of lack of precision, which is a pardonable irregularity in one who holds it as his firm conviction that this said lake region abounds in a considerable quantity of other mineral substances which further belong to that extensive group of coal.

E. H. PLUMACHER,
Commercial Agent.

UNITED STATES CONSULATE,
Maracaibo, August 10, 1880.

COMMERCE AND CUSTOMS OF MARACAIBO.

REPORT BY COMMERCIAL AGENT PLUMACHER, ON THE CITY OF MARACAIBO, ITS SITUATION, ORIGIN, TRADE, AND SURROUNDINGS.

SITUATION OF MARACAIBO.

Maracaibo is the capital of the sovereign State of Zulia, one of the independent states composing the republic called the United States of Venezuela. It is the seat of the local government and of the higher courts of the State, and the residence of the president of Zulia. It possesses fine public buildings, and is endowed with several charitable institutions for the relief of the sick, and with some fine colleges. It is situated on the western coast of the large sweet-water lake bearing the same name, at a distance of 20 miles from its entrance, on the shores of a beautiful bay, which, protected by two peninsulas, forms a well-sheltered harbor, affording safe anchorage for a great number of vessels.

The only drawback to the development of Maracaibo as the greatest commercial port on the northern coast of South America is the presence of a bar at the entrance of the lake, which prevents vessels of more than 11 feet draught from passing fully loaded, to the total exclusion of the larger class of sea-going craft. As it is now, ships can only do so with the assistance of a tug-boat and native pilots, and others that attempted to come in at their own risk have frequently been wrecked on the sand-banks.

SETTLEMENT OF MARACAIBO.

The city of Maracaibo was settled by the Spaniards some 250 years ago, who, as early as that period, recognized the advantages possessed

by its situation to control the traffic of the whole lake, and who built a city there, which soon became the chief market for the produce of the surrounding country. The city is built in the old Spanish style, with the streets laid regular and at right angles, the houses being low and heavy and covered by flat tiled roofs, that are conveniently arranged to convey the rain-water into cisterns for house use.

TRADE AND PRODUCTS OF MARACAIBO.

Maracaibo contains approximately 30,000 inhabitants. A census to arrive at the correct number has never been established.

As regards trade, it is a place of great importance and is connected twice a month by steamers direct with New York, and has besides a weekly communication by steam, via Curaçoa, with the West Indies, United States, and Europe.

The great facilities offered here for obtaining a cargo cause also a great many sailing vessels to come here to get loaded. Some come with freight from abroad, and others in ballast from the West Indian Islands, and even from the Brazils and Cape of Good Hope.

Through its geographical position, it has become the staple place for the concentration of all the produce that is brought down from the adjoining States of Trujillo, Guzman, and Tachira, and the neighboring province of Santander, of the Republic of Colombia, whence coffee, hides, quinia, &c., are brought down in great quantities by way of the Río Catatumbo, the chief river of the State of Zulia, and connected with the capital by a weekly steamer and a number of sailing vessels.

In addition to the articles above mentioned, the staple produce of the country consists further in cacao, balsam of copaiva, fish-bones for the manufacture of isinglass, fustic, cedar, and a variety of woods for building purposes of great value and durability, dividivi, cañafistula, and a number of gums and herbs for medicinal use.

From the savannas of the Goajira, a peninsula situated to the north of Maracaibo, and well adapted by nature to the raising of stock of all kinds, large quantities of cattle, sheep, and goats are brought to the capital both for home consumption and for transshipment to the interior parts of the country, where they are sold to great advantage. The majority of the horses, mules, and donkeys are also supplied from there, and form a great item in the commerce carried on between Maracaibo and the Goajira, being chiefly bartered for rum and cloth by a class of people that make it their special business to trade with these Indians.

A considerable quantity of brown sugar and rum is produced here, but up to now but little has been exported.

SURROUNDINGS OF MARACAIBO.

The country around Maracaibo rises gently from the shores of the lake to the height of 200 feet, continuing at that elevation in gentle undulations and forming a number of hills of rather a barren aspect. They are covered by thorny brushwood and scanty herbage that serve to feed a multitude of goats. The natural poverty of the soil, which is interspersed with seams of lava and beds of yellow ochre, in addition to continual dry weather, excludes all other vegetation on the hills. Only on the shores of the lake are found a number of settlements, which for several miles either way form a kind of suburb, surrounded by dense cocoa-nut groves. They present an agreeable contrast with the naked hillsides close by. By dint of much labor and perseverance, the inhab-

itants have managed to raise a number of fruit trees and ornamental flowering shrubs, besides establishing some modest kitchen gardens. They gather the manure of their numerous goats that supply Maracaibo with milk to improve a soil, that otherwise would remain wholly unproductive. Beyond this one may meet an isolated cottage here and there, but of the poorest description, and farther on the deserted store-rooms of an old salina.

MARACAIBO INDIANS.

At a distance of about five miles from Maracaibo in a northerly direction is found an Indian village, called Santa Rosa, partly hidden from sight to those approaching by land by an extensive cocoa-nut grove that stretches along the shore for a goodly distance. The Indians live in the middle of a small shallow bay formed by the lake, where they have built their huts on the top of piles driven into the sand, and where, surrounded by water on all sides, they can follow their pursuit of fishing with ease. The rushes that furnish the thatch for the covering of their huts grow close by in the water, and serve also to make mats, that constitute the only side walls these primitive people use in their households. They are a peaceable race, and quite different from the Indians that live in the peninsula of the Goajira by the raising of stock, hunting, and cattle stealing. Those are a ferocious lot, and one of the tribes—the Cocinas—are known to be very dangerous customers. The case related by the captain of an American vessel wrecked on that inhospitable coast most likely refers to that tribe. In an incredibly short time after the accident took place the shore swarmed with them. They at once boarded the vessel and forcibly took possession of everything they could lay their hands on, compelling the captain, crew, and passengers to take to the boats to save their lives. These Goajira Indians have maintained their original language, and, although belonging virtually to Venezuela, they acknowledge no government, pay no taxes, and have their own chiefs. The fishing tribe at Santa Rosa, however, speak Spanish, and merely retain their dress and style of living from habit, and perhaps from principles of economy.

THE CITY OF MARACAIBO.

As a town Maracaibo cannot boast of being very pretty, yet it must be pronounced far superior to a great many other places in Venezuela. The streets are straight and regular, and the sidewalks are paved with bricks, but the middle consists of nothing but heavy sand, and serves as a natural water-course to carry off the rain-water that at every shower descends in torrents from the barren hills in the rear of the town. In dry weather this kind of dust is most uncomfortable for walking, the feet sinking at every step up to the ankles. At the slightest gust of wind it is scattered in clouds, entering the inmost corners of every house. Yet it is preferred by many to the rough Spanish pavements found in so many cities of Spanish origin, that make walking a kind of martyrdom.

WATER SUPPLY.

There being no springs whatsoever in the vicinity of Maracaibo the population is dependent on the waters that fall from heaven for drinking and house use, for the water of the lake being mixed by the tides with sea-water cannot be drunk. Nearly every large house is, therefore, provided with a capacious cistern, well covered and secured, into

which the rain-water collected from the adjoining roofs is conveyed by suitable gutters. Before using it is commonly passed through a filtering-stone.

THE HOUSES AND PUBLIC BUILDINGS OF MARACAIBO.

The houses are nearly all after the same pattern, the walls being built of stones or mud, according to the owner's means, and covered with a coating of plaster. The doors and windows in the houses of the well-to-do are usually large, to secure the greatest amount of ventilation, and in those of the poorer classes they are disproportionately small, probably to save expense. Glass panes being unknown, and the general construction suited to the dry time of the year, the rooms are flooded at the least shower. In some cases the houses are provided with verandas, which not only keep out the rain, but make the rooms cooler; but the practice is only adopted by persons of means or for government buildings.

The chief winds being north and south, many houses are built in such a way that the winds can pass right through, which causes them to be very cool. According to the custom of all hot countries where earthquakes and hurricanes prevail, most houses are built of one story; but, owing to the fact that Maracaibo has enjoyed a comparative immunity from these destructive influences, new houses of two stories were built afterwards, and those, being elevated above the rest, get the full benefit of the breeze, and are of course exceptionally cool and comfortable. The peculiar custom of Spanish population to tile their floors for coolness' sake, has been retained here even to excess; thus they cover the flooring of their second stories with tiles, and are obliged to employ extra strong beams to support such a weight. A great many foreigners, as also some wealthy natives, prefer to have their residences on the other side of the bay, at a place called *Los Hatigos*, or country seats. There they have built commodious houses, surrounded by flower-gardens and shaded by innumerable cocoa-nut trees, and there, far away from the bustle and noise of the town, they love to enjoy the soft breeze. Some of them keep boats and go right across the bay, while others, preferring horse exercise, take a ride in the cool of the evening to reach home, and return to their business early in the morning before the sun has become hot.

The public buildings of Maracaibo are comprised by the government house, the court-house, the custom-house, the theater, and the various Roman Catholic churches. They are all built of stone and brick, and covered with ornamental plaster work. The natives are great adepts in producing a variety of cornices and other architectural embellishments, by laying on a covering of plaster over the original stone work, which is painted to resemble marble. The buildings referred to have all very deep verandas, and the rooms are deliciously cool. But this style of building is very expensive work, and while the outside makes a great show of stately pillars and balustrades, all finished in the highest style of art, the inside has remained half done, some of the rooms actually lacking the rear walls, for want of public funds.

The churches are all stately buildings, designed and executed with a great deal of taste and built very solid, but all more or less in a state half finish. This, however, in no way interferes with the service going on as usual.

Much in the same way matters stand with the new theater, where the performance took place before it had roof or flooring. The heavy style

of building before alluded to has been repeated in the construction of the theater, where beams and rafters of double dimensions and number have been used more than was necessary for the support of the light iron roof and wood flooring of the galleries.

In the same manner a double number of the requisite rafters to support the corrugated-iron roof of the new wharf-shed was employed, independently of the fact that each rafter was broad enough to be ripped in two, and that the wood used was of the strongest and most durable description the native woods can furnish.

SOLDIERS AND POLICE.

As barracks for the accommodation of the native soldiery, a number of old spacious houses adjoining each other is used, the division walls being broken down to establish communication. From here the guard at the government and customs house, which are changed daily, are preceded by a military band, which also plays twice a week at the public garden called the "Plazza Concordia."

The army is armed with Remington rifles, and the police force with carbines with sword bayonets. There are 500 men detailed from the national forces for a garrison both for Maracaibo and the fortress of San Carlos; a military station at the entrance of the lake, and at the same time the headquarters of the pilots and custom-house police for the suppression of contraband.

POPULAR CHARACTERISTICS.

The population of Maracaibo boasts of possessing traces of the first Spanish conquerors, some of them bearing the names of very old families. The rest are a mixture between Indian and Spanish blood, and they themselves, in their public prints, call their race *la raza Indo latina*, as applying to the population of Venezuela, Colombia, and the other adjoining South American republics. On the whole, they are rather good looking, and the young women very pretty, with their long black hair and dark eyes. For a regular head-dress the ladies wear the "*abrigo*," made of black thin lace work, or "*la seductora*," made of gaudy-colored material, and arranged very gracefully over the head and shoulders. As a rule, all persons of the least standing are very carefully dressed when going out, and produce a favorable impression by the neatness of their appearance.

The better classes are well educated, and show great taste and an aptitude for literature and poetry, in both of which they excel. They are also great orators, and seem to have cultivated the art of making appropriate speeches whenever any occasion presents itself, and to issue high-flown proclamations.

For a number of years a society for mutual aid in cases of sickness and death has been in operation under the name of *Mutuo Auxilio*, doing a great deal of good.

The chief feature of the lower classes is habitual indolence, which is carried by some to an extreme. Their food being cheap and their other wants limited, the necessity to engage in constant work hardly exists, and master tradesmen experience great trouble in finding permanent hands to carry out their contracts. The want of punctuality is therefore severely felt in all cases where work is given out to be done.

There is no lack of talent among the natives, but it lies dormant and requires a higher state of civilization than they are now surrounded with

to bring it to perfection. For music they possess a decided gift, that only requires cultivation to make them attain proficiency.

Among the native sailors that serve on coasting vessels and river boats or bongoes, a great many play the mandolin to perfection, producing a class of melodies to be found only among the Spanish races and suited to their peculiar mode of dancing.

A great step toward progress has been taken lately by the establishment of a number of public schools both for boys and girls, and the means necessary for their support are raised by a tax, that requires adhesive stamps to be fixed on different classes of documents, as receipts, bills of sale, and on all inland letters.

It is to be hoped that the improved system of education thus established for the benefit of the girls in this country may be carried on in accordance with those liberal principles now practiced amongst free and enlightened nations, and that it may tend to emancipate the coming race of women from the obsolete customs of a past age, that required them to be perpetually shut up in the house at the risk of their health, merely to satisfy the demands of a so-called propriety.

The prevailing custom of Maracaibo is to keep all young women indoors, limiting their recreation to the few hours spent in going to hear mass, to assist at an occasional entertainment given at the house of a friend, or to undertake a solitary walk to the public gardens with servants at their heels. The only exceptions to this practice are at the time of public festivities, like carnival processions, &c., when the strict rules will be temporarily relaxed and the young folks allowed to enjoy themselves in a natural way for a short time at least.

As a natural consequence of this unreasonable way of bringing up young women they are deficient of that robustness so common in other countries, and soon fade from want of health. In a social regard, they seem to be perpetually under a kind of restraint when in company of the opposite sex, and totally ignorant in the art to develop those qualities that elsewhere make them the chief point of attraction in company.

POLITICAL AGITATION.

The greatest drawback toward the maintenance of a peaceable state of society and the development of the advantages possessed by Maracaibo as a great center of commerce must be attributed to the tendency of the population to engage in political agitation. Nearly every person is more or less occupied with the politics of the place to the detriment of his own business, and the town is divided into political parties that live in bitter hatred toward each other. As their main object is concentrated in the election of the candidate of their own nomination for the presidency of the State of Zulia, they try to gain as many followers and votes as possible, and employ all kinds of maneuvers to attain this end. They parade the streets with parti-colored banners, headed by bands of music and burning innumerable fireworks. At other times they exhibit their disregard for the usages of modern civilization by firing shots at each other and by other acts tending to disturb the public peace, that would never be permitted in other countries. But the light punishment that generally follows outrages of this kind is hardly deterring, and young people grow up amongst shooting, longing for the time to come when they also shall be able to handle a revolver at their pleasure. A perpetual fear of getting accidentally shot has taken hold of the community, from the fact that, in the event of such a street fight, the parties interested mostly shoot at random and without taking any

particular aim whatsoever. A thorough damper has been put, in consequence, on the practice of going out after dark, and social gatherings, theaters, and concerts are but sparsely patronized, since parents are afraid to expose the members of their families to the results of such wanton shooting. Besides this, the people are always disposed to neglect their business, and to listen to political news, or to engage in plots for the overthrow of their opponents, and an excitement prevails that acts very unfavorably towards the development of trade. With a view to suppress these riots the government has increased the number of troops stationed at Maracaibo, and, at the least alarm, they are called out to restore order; but it seems to produce little good, and rather fans the party feelings into greater heat.

COMMERCE OF MARACAIBO.

Commerce forms the chief pursuit of the inhabitants of Maracaibo, as the locality offers great advantages for the buying up of all the produce from the whole surrounding country and for the distribution of the imported merchandise. The lake, in connection with the navigable rivers that flow into it, forms the natural and chief highway to the interior, and this town affords the greatest facilities for the interchange of commodities.

The wholesale commerce was chiefly in the hands of the Germans, who very early took hold of it and nearly succeeded in monopolizing the buying of produce. They made it a practice to advance large sums of money to the producers and traders in the interior, with the object of securing their crops beforehand, or to buy up the chief articles of export, and they gave them merchandise at a very long credit. All others that could not command the large capital necessary for such operations had to content themselves with the buying up of the minor products, such as fustic, dividivi, skins, hides, fish-bones, balsam of copaiva, &c., and had to leave the commerce in staple produce to their more favored competitors.

Little by little, however, the drawbacks of such an extensive credit system made themselves felt, and many of the interior merchants, who could only keep up by increasing their liabilities year by year, had in the end to give in. They would take advantage of some political disturbance and fail under the cover of losses sustained during the revolution. These cases, becoming more and more frequent, tended to reduce the credit system to its old proportions, and many of the houses that formerly did a thriving business were compelled to reduce their operations, whereas many of the less opulent traders of other nations, by close attention to the minor articles of export, succeeded in raising themselves even beyond mediocrity.

TRADE WITH THE UNITED STATES.

The United States, being the nearest market, takes the foremost rank amongst the countries trading with Venezuela, and, fully convinced of the advantages offered by Maracaibo for the extension of their trade, some Americans have already established a branch business here, and others are following.

CONSULAR REPRESENTATION.

The foreign interests are represented at Maracaibo by the consulates of Italy, Denmark, the United States, and the republics of Colombia

and Chili, while England, France, Holland, Sweden and Norway, Spain, and the small South American republics have vice-consulates here. The United States and Great Britain alone are represented by a "consul missus," a consular officer whose sole business it is to attend to his official duties, while the other countries only have a "consul electi," chosen from amongst the foreign merchants of high standing at this place.

The German Empire and Austria are not represented by consular officers, notwithstanding that most of the leading houses of Maracaibo belong to the German nationality.

EXPORTS OF MARACAIBO.

How far Maracaibo is foremost in commerce may be seen from the fact that the exports from this port to New York in the year 1879 amounted to over \$4,000,000, in coffee, cacao, Peruvian bark, hides, and other goods, and that over 300 sea-going vessels cleared the custom-house during the same period, the lion's share falling to the British flag.

THE MARKET SUPPLY OF MARACAIBO.

Business in Maracaibo begins at a very early hour of the day. Long before dawn the country people flock into town to sell their milk, cheese, sugar, vegetables, fish, birds, and the different kinds of meat in the public market-place, and, considering the disadvantages of the situation, the articles exposed for sale are of great variety. Compared with markets that are situated in a more seasonable locality, it is, of course, behindhand. Beef, sheep, and goat mutton are abundant, but never fat, and consequently of little flavor. The dry and arid country around Maracaibo and the neighboring district of the Goajira seem to produce cattle with great facility and in abundance; but the soil seems to be deficient in those qualities essential for fattening stock, and the meat is not so sweet and rich in flavor as elsewhere.

Pork is hardly fit to be eaten, and very little used except salted, since no one will attend to the rearing of swine in a clean manner, or even import a good breed to commence with. With but few exceptions, the hogs are permitted to roam about the streets, to devour all offal, and to act as scavengers. On the whole, they are a very poor lot, all snout and legs, and but little adapted for fattening.

The market abounds besides in game of all description—rabbits, partridges, wild fowls, and ducks, pigeons, and a variety of smaller birds, that are very good eating; also the cachicama, or armadillo, an animal with a horny shield resembling a turtle shell, whose flesh can hardly be distinguished from pork; the iguana, a large lizard, with a ferocious looking comb, all standing up from his head and back, little consumed by foreigners, but furnishing a favorite dish to the natives. Besides these, there are sea-turtle, land-turtle or yco tea, and deer of different kinds. The country around Maracaibo, being mostly uncultivated, is a rich hunting ground, and many people live altogether by hunting. The smaller kind of game is mostly caught by traps, and for the larger one, like deer, the hunter waits in ambush. Knowing the spot these animals frequent at sundown and before the dawn of day, they sling their hammocks in the branches of an adjoining tree, watching until the deer make their appearance, and shoot them from the hammock. Tigers and ounces, however, do not make their appearance so near town, and are only met with in the far off mountain districts of Perija and Siruma, where they often make great havoc amongst the cattle. To judge from

the quantity of skins brought to Maracaibo for sale, these animals must be very numerous.

The fish that is brought to market is generally caught the day or night before, and, being fresh-water fish that cannot keep long, it arrives in Maracaibo quite stale, and proves but an insipid article of food compared with fresh ocean fish. It is, however, salted in great quantities and sent to the interior, where it is bought up eagerly, answering the same purpose as codfish does in the West Indies. Cheese is made in the country also and supplied plentifully in the market, but it is quite different from the cheese made abroad and only suits the taste of the natives, who are in the habit of eating it with every meal. Foreigners rarely learn to like it.

All those vegetables that require a cool climate to come to a state of perfection, as cabbages, turnips, carrots, beets, potatoes, &c., are imported from New York by steamers. The only article of consumption that is raised in the "cordilleras" of the adjoining States, and belongs to the class just mentioned, is the potato, but it is very much deteriorated and quite small. If proper seed be obtained from the United States or Europe, the growing of these vegetables for the consumption of the country itself could be made a very profitable business, since the climate in the mountains at the altitude of 3,000 to 4,000 feet resembles that of the temperate zone in every respect, and is quite favorable to the production of even wheat and the fruit trees of the colder countries, such as apples, peaches, strawberries, &c. The only thing required to derive all the advantages offered by nature in these delightful mountain climates are railways, that would shorten the distance from the lowlands and lake ports, and it is an agreeable proof of the progressive tendency of the country that concessions have been obtained from the Congress of 1880 for two new railway lines that are to establish communication between the shores of the lake and the interior on two distinct routes.

The chief article of food for the majority of the people are plantains. They are grown in great quantities and to great perfection on the banks of the rivers, where there is an accumulation of alluvial soil, and are extremely cheap. They are mostly eaten ripe, or half ripe, in addition to the creole cheese and chocolate prepared with water; in fact, this combination seems to constitute their favorite dish, to be varied only by an occasional *sancoche*, made of meat or fish boiled together with cassava and all the vegetables that can be obtained.

As soon as the sun becomes hot these people that came to the market to sell gradually disappear with their mules and carts and donkeys till the next morning, to repeat exactly the same scene, for every day is a market day here, Sundays included. Donkeys play a great role in the domestic economy of this country, and the ingenuity of the natives to make them carry water, mortar, stones, dirt, timber for building, grass, firewood, barrels filled with cigarillos, dry goods, &c., is very great, every article having its own kind of vehicle to suit the nature of the material to be conveyed. Taking into consideration the scanty feeding that will suffice to keep a donkey alive, and even in working order, it will be admitted that for a sterile country, like the one around Maracaibo, these animals are a very real blessing.

PAJA GRASS.

The people, where occupation or pleasure causes them to keep horses or mules, buy their grass daily from the country people, who expose it for sale in the streets in great quantities. This grass is highly nutri-

tious and easily propagated; it is provided with knee joints that send out fresh roots, and soon covers a large piece of ground if not checked. As it is the only kind of grass that does not turn sour on swampy ground, it is extensively grown on the shores of this lake, where one part will float on the water, while the other part spreads out upon the land. It will kill all other kinds of plants that are planted in its vicinity, and from the hardness of its stalks is called *paja*, or straw. In the West Indies it is known under the name of "para grass," probably a misnomer of the same word "*paja*" used here now.

THE CLIMATE AND HEALTH OF MARACAIBO.

The climate of Maracaibo is hot in the extreme from the month of May to October, during which time the wind comes from the south, bringing along with it showers of rain, which culminate in a regular rainy season during the last month. This is the unhealthy time of the year, when fevers prevail, from which both natives and strangers suffer. During the remaining part of the year the north and northeast winds are blowing more or less, and there is no rain at all. During that time the temperature is considerably cooler and very pleasant. The average temperature may be said to be 28° Reaumer and upwards in the shade during the summer, and 26° in the winter time. From September to October is the time for thunder storms, that come with great force, accompanied by heavy rains and gales from the east, often causing the vessels in the harbor to drag their anchors.

During the hot months Maracaibo at times suffers very much from the ravages of yellow fever, that takes its victims from among the shipping, the natives coming from the interior, the foreigners residing there, and even the creole inhabitants. As a rule, all those coming from a temperate climate, whether from Europe or the highlands within the tropics, are exposed to the attack of a certain class of fever, called acclimatization fever, which, when neglected, frequently turns into real yellow fever. Some medical men attribute this fact to the change and transformation the blood of those newly arrived have to undergo in order to stand the effects of a continual heat. Others maintain that the miasmas exhaled by the vegetable masses rotting in the swamps around the lake are a perpetual source of danger to the human body, and are most destructive when the wind blows from that quarter where the swamps are situated. It is certainly a fact that cannot be denied that foreigners, as a rule, and natives, to some extent, suffer congestion of the liver.

Mosquitoes abound in Maracaibo, and are a perpetual nuisance, both day and night. To newcomers they are particularly troublesome, raising a big lump on their skin at every sting, and causing an itching pain to continue for days. After some years of residence, however, the blood begins to change, and mosquito bites, though still unpleasant, cease to be productive of the same amount of misery and pain as they were at first. Every one, of course, who can afford it, sleeps at night under a mosquito-net. Centipedes, of immense size, abound; also scorpions, wood ants, and snakes—amongst the latter some poisonous ones, whose bite causes instant death. Cleanliness, and keeping the premises free from accumulations of rubbish that afford them a convenient hiding place, is a safe measure to keep them away.

SCARCITY OF PHYSICIANS.

It is to be regretted that, from want of competition, doctors are both scarce and dear. To this may be added that, failing to make themselves

acquainted with the constant improvements and discoveries made by the medical faculty, they are grossly behind their time, employing methods that have been rejected in modern countries; bleeding, for example, is still the order of the day. A young physician, of a modern education, and disposed to dedicate himself to his work and to study prevailing cases of sickness, would do well here. In justice to the medical faculty of this town, it must be remembered that the population in general has done little toward the support of their physicians, taking their services like other goods on the prevailing credit system and never paying at all. Collecting so little of the fees due them, the medical men were compelled by necessity to raise their terms with those that paid at all, and so an excessively high standard of compensation has been established that completely precludes the possibility of a poor person ever having recourse to a member of the faculty. The people, therefore, frequently consult some old Indian women, who are supposed to possess secret remedies, and who really at times effect most wonderful cures.

FEVERS, LEPROSY, ETC.

Amongst the different kinds of sickness prevailing in Maracaibo may be noted gastric fevers, dysentery, malarial fevers, whooping-cough, scarlatina, and measles, the latter three chiefly amongst the children. Small-pox and cholera are entirely unknown here, according to the statement of an English physician of over 20 years standing in this town. Skin diseases, however, are of more frequent occurrence, and attack both natives and foreigners. Leprosy, the bane of hot countries, is found here in its most hideous aspect, notwithstanding the efforts of the government to isolate those affected with this terrible disease on a distant island, called Lazarus Island, where they are taken care of. These sanitary measures have proved, however, still incomplete, and do not extend to more than one-third of the number affected, the remainder having until now succeeded in hiding themselves in the suburbs of the town and in the adjoining country.

Syphilitic diseases are very much spread here, and have ruined the health of many. In the higher districts of the Cordilleras goiters exist, the same as in Switzerland, and cretins are often met with.

INCORPORATED LABORERS.

Considering the social condition of the population in general, it cannot be said that they are deficient in talent, or lack the faculty of improvement, but that a number of unfavorable circumstances have combined to make them the lazy, inconstant, and indifferent race they often appear to be. In the Galeata of Maracaibo, a body of laborers incorporated by government and placed under military command for the purpose of controlling the inspection of all importations by the custom-house authorities and to facilitate the dispatch of vessels, the men are working exceedingly well. They may be seen daily in the act of carrying immense weights on their shoulders, continuing this work for hours. On one occasion a single man took up five bags of coffee, each of over 100 pounds, and, balancing them one on top of the other on his shoulders, carried the whole of them away. These facts prove at least that by a wise administration a class of people are made to do their work that formerly were considered hopelessly idle. As this corporation has now existed in Maracaibo for over 20 years without any interruption, and at a great deal less expense for the work performed than private

persons would have had to pay, it may be cited as an example of what can be accomplished by good management.

THE TRADES OF MARACAIBO.

Carpenters.—Carpenters and joiners as a rule do very good work even with the hardest kind of woods, but labor under great difficulties, not being assisted by modern practices that would make their work pay.

All the heavy logs of wood, as they come from the forest, are ripped by handsaws into planks, boards, and scantlings by the most primitive and laborious method. The log to be sawed is placed in a standing position against a kind of horse fixed for timbers, one ending resting on the ground, while two men on their knees and one above draw the saw up and down. The barbarity of the whole operation reminds one of the time of the middle ages, and suggests the idea that the patience of these poor people might be employed to some better purpose.

Masons.—In mason work and plastering they are very clever, the more so when it is taken into consideration that no stones of any size are found near Maracaibo, and that all the different buildings, pillars, and other ornamental work require to be constructed out of a kind of concrete or rubble work, and that bricks are but seldom used for anything else but flooring and side walls.

The usual method of making walls for houses and yards is to build them up of a kind of clay mud, and to top with a ridge of half-round tiles where they are exposed to wind and weather. This class of wall requires upright posts at a distance of every 4 feet. Wild canes are then tied to both sides horizontally and vertically 4 inches apart, forming a kind of framework with hollow squares 4 inches either way, into which lumps of clay are introduced to build up the inside of the wall. A coat of the same material is then put on both sides to cover the canes, and sometimes small stones or coarse sand are inserted from the outside to offer a better hold to the subsequent coat of plaster that is put on. This kind of construction has the only recommendation of being cheap at first cost. When applied to houses in the respectable part of the town, a fresh coat of plaster is required every 6 months, and it becomes a source of never-ending expense in the long run.

Tanneries.—There are some establishments for tanning raw hides, and the natives use their own leather for making harnesses and the soles of boots; but the highly-finished classes of leather for the tops are always imported. Their ingeniousness of applying the raw cow hides with the hair on for the different pieces of harness appertaining to pack-mules and donkeys is very great, doing away with buckles or other fittings altogether. They make a kind of open saddle-bags of this untanned hide that are placed on donkeys, and may be filled with sand, mortar, stones, bricks, or other materials that require to be removed. They are sewed together with strings cut out of the same hide, and may be repaired or renewed by any one.

Saddlery.—A branch of industry brought to great perfection is the manufacture of highly-finished saddles, for which the natives, like most Spanish races, have a great predilection. The ornaments are executed with gold and silver thread on velvet of different colors, and are finished in the highest style of workmanship. A political leader, to whom money was no object, is said to have spent as much as a thousand pesos for one of these saddles, and his staff, not wishing to fall short in outward magnificence, spent at least six thousand pesos more to procure an outfit equal to that of their chief.

Embroideries.—They further excel in the production of a certain class of embroidered pocket-handkerchiefs, as delicately made as the finest Brabant lace, and displaying a variety of patterns. This kind of hand work is chiefly done by women, and is quite peculiar to the country, and never met with anywhere else.

Among the local industries may be noted a factory for the making of soap and composition candles, and one for the extraction of oil from the native cocoa-nuts. Both are worked by steam, and give satisfactory results.

Printing.—There is a steam printing-press in operation, turning out very neat work indeed. It prints one of the four or five weekly periodicals that are published at Maracaibo, besides the commercial bulletins being distributed by many mercantile firms amongst their customers in the interior. It also does a great deal of private jobbing, since the political leaders of the different parties, as well as the public dignitaries, are in the habit of making grandiloquent speeches and proclamations upon every occasion, that require to be printed for the benefit of all concerned.

Chocolate factories.—A steam chocolate factory is in full operation, and can hardly supply all the demands for home consumption. The article produced is made without any addition of sugar, and is of first-class quality, being manufactured of Venezuelan cocoa, that enjoys a world-wide reputation. With the natives chocolate forms one of their chief aliments.

Tobacco.—Tobacco is produced, on a limited scale, in the province of Tachira, and the cigars made of it are very heavy, without the flavor possessed by real Havanas or other choice brands. The tobacco business is in its infancy, and it is very much to be deplored that the tide of Cuban emigration has never been directed to this country, for it is an established fact that wherever the Cubans go, even for a time only, they leave behind them the art of growing and curing good tobacco. As the soil and nature of the State of Zulia seem to be particularly well adapted for the growth of tobacco in its rich plains watered by numerous rivers, it is surprising to see this branch of agriculture so much neglected, while sugar-making is carried on at a loss.

The natives are not so fond of smoking cigars, which they call "tobaccos," as of the paper cigarettes, or "cigarillos." There are several factories here for making the latter, but the paper, as well as the *pica-dura*, or filling, is imported. There are a great many foreign cigars imported that could very well be made in the country itself. The smoking of pipes is comparatively unknown—so is chewing; but they have another way of taking the essence of tobacco, called "chimon," in their mouth, and spitting it out again. The tobacco is pounded and the juice boiled down into a thick paste, for which its devotees keep a kind of ornamental box, like those that use snuff.

Brick-making.—There is a number of kilns around Maracaibo for the manufacturing of bricks and tiles, both for roofing and flooring, as also for water jars and earthenware pots; but the supply is not at all equal to the demand, and large numbers are continually imported, chiefly from France. The material found in the vicinity of the town is pronounced excellent for brick-making, and at one time an attempt was even made to produce the common class of porcelain-ware here, for which the materials were also found near by, but it was not continued. Other kinds of valuable earths are found near by, as, for instance, rich deposits of yellow ocher, that only require digging and carrying away.

CONCRETE SUGAR MANUFACTURE.

The sugar produced here is chiefly of the kind called in England "concrete." It is cast in wooden molds at a time when the boiled liquor has attained a certain consistency sufficient to cause the mass to stick together, but the formation of a good grain is sacrificed by the operation. It is called papellon, and may be transported in a skeleton basket with thatch leaves inside, requiring no casks like the muscovado sugar. It is produced in very large quantities and overstocks the market. As such kind of sugar finds little favor with the refiners abroad for the want of sharp grain, it is but little exported. The manufacture of the article seems to have become a mania with a certain class of the country people, who often run themselves into debt and ruin to keep it up. By such small way of manufacture their first outlay is comparatively small, since, with the exception of cheap iron kettles and the grating bars, everything is made of wood; but they lose so much in time and labor and get such a small percentage of juice for the want of powerful machinery, that they can never compete with other establishments which, assisted by capital and improved appliances, produce a superior article, that may be exported and relieve the home market.

MARACAIBO RUM.

Not having any distilleries combined with their sugar works, the owners forego the benefits derived from the scum and washings for making rum, and have to sell their sugar to the distillers in Maracaibo, to be again reduced to sirup. Owing to the small size and complicated nature of the apparatus employed, the majority of the stills cannot be cleaned inside and the rum runs out highly impregnated with copper, and must undergo an elaborate process of filtration before it becomes pure again. This evil could easily be obviated by the employment of larger stills and by the substitution of pewter for all piping and such parts that cannot be got at easily for cleaning. Being inferior in flavor to other brands of rum of long-established reputation, it can only compete with the products of other countries by its greater cheapness, and it is towards this point the attention of the makers ought to be directed, if it is ever to become an article of exportation. For home consumption it is already produced to excess, and the only outlet now open for the overstocked market is to be found in the barter carried on by the traders on the frontiers with the Indians of the Goajira, who love rum more than their life, and will make any sacrifice to obtain it.

SCARCITY OF WATER.

The scarcity of water in times of drought has caused some enterprising parties to send for instruments and piping to sink artesian wells, and they are at present engaged in the execution of the scheme. Should the plan succeed to provide Maracaibo in that way with a copious supply of good drinking water, it would add immense value to the place and the cost of living would be considerably reduced. Whether the present undertaking is guided by scientific researches, or the secret knowledge of water-seekers, or only at random, is for the present unknown. At present all drinking water must be bought, at the rate of 10 cents for a load of 3 gallons, by all those who do not possess any cisterns themselves. A great many boys with donkeys make a trade of carrying water. The donkeys are provided with two light iron frames

holding each a small-mouth jar. For the water from the lake the charge is 3 cents for the carriage; it is used for washing and cleaning, as it contains but little salt, but it cannot be drunk.

Drinking water is generally drawn by buckets from the deep cisterns, and the charge for carriage amounts to 5 cents per load, making the total cost of 3 gallons 15 cents, or 5 cents per gallon. During extreme dry weather the price rises very much, and has been known to be 60 cents for 3 gallons, but during the rainy season it goes down to half price. These water boys are all half clad, and with their perpetual drawling and singing are a decided nuisance.

HORTICULTURE AND FLORICULTURE.

With a more liberal supply of water horticulture and floriculture would also thrive better. Vegetables, except of the most ordinary kind, are hard to be obtained, and flowers often cannot be got for love or money. The latter are always very dear and in great demand for festive occasions; they are also worn in the hair and form a nice contrast to the black tresses.

The inhabitants seem to be very fond of flowers and shrubbery. Some of them have planted shade trees in front of their houses and protect them by rails and brick walls around the roots. Most of these trees are "matapalos," a kind of fig-tree, that sends out roots from all its branches to suck nourishment from other trees that grow near by; hence its name of "tree-killer." It produces a very dense shade when placed in a favorable spot and well watered. At the same time it can stand the dry and arid soil of Maracaibo better than most other trees. Its foliage is cut in dry weather to make provender for animals.

Some people take a great deal of trouble here to raise a few vegetables. They construct raised beds 3 feet over ground, made of logs of wood and placed on piles driven in the sand. Many of these are 30 feet long by 5 feet wide and are filled with manure and compost, for there is no alluvial soil to be found near Maracaibo. In this way they raise escallions, garden eggs, red peppers, and tomatoes along the shores of the lake where water can be had to irrigate them with a watering pan. Since the soil is so very sandy and exposed to inundations when it rains, this way is considered the only safe one to prevent the beds from being buried with sand.

Neeseberry or sapotilla trees, and a kind of almond tree that is chiefly raised on account of its nice shade, are frequently planted before the houses in the settlements out of town; also a kind of plum-tree, the fruit of which is called *ecagues*, and is used for making a delicious kind of "dulce" (preserved fruit). In the West India Islands the same fruit is known under the name of coco-plum. Watermelons, muskmelons, and pumpkins also thrive well in this hot and dry soil. Celery is much grown to utilize the leaves, for it does not make any root to speak of in hot climates; neither do lettuce and cabbages produce any heads here.

IMPORTS FROM THE UNITED STATES.

The trade in foreign salt provisions can hardly be said to exist here at all. The people salt their own fish, beef, and goat-meat, and it is sent all over the country for sale, keeping sound for a long time. The only articles in the provision line which are imported from the United States, and used largely, are lard and flour, some butter, some few hams, canned provisions and fruits; biscuit and beer are also used, but moderately. Out-

side of the provision line the United States supplies furniture, some articles of hardware, like axes, sewing-machines, printing-presses, small sugar-mills, and sugar-boilers. A lot of machinery for the extraction of fiber from the cocuiza, a plant of the nature of the manilla plant, resembling the top of a pine-apple, but magnified at least a hundred times, was brought here from New York to be erected in the mountains of Trujillo. It was proposed to convert the fiber into cordage and material for coffee-bags, and to erect the machinery in a mountainous district, where absolutely no carts can be used for transportation; the only method, therefore, to put all the materials on the spot was on mules' backs. Considering the maximum weight an animal can carry with safety to be 200 pounds, the whole machinery should have been constructed in pieces that would not exceed that weight. Instead of this, the boiler came out in one piece, placed on a four-wheel wagon 15 feet long without the pole, and the other machinery in proportional sizes, quite unsuitable for being conveyed on the backs of pack-mules. The machinery, therefore, could not be moved to the place of its destination without disproportional expenses, and the enterprise has been abandoned as a consequence. The manufacturers, however, suffer also, losing the trade in that class of machinery, which, if once established, would have caused many more orders, for there are parts of Venezuela where the cocuiza grows wild in immense quantities, and where the introduction of fiber machinery would be of incalculable benefit. The rules applying to the preceding case are of course applicable to all similar cases where machinery is meant to be transported to the interior, for the roads are equally bad all over the country and carts are throughout impracticable.

A CHANCE FOR AMERICAN MANUFACTURES.

The government of Venezuela, with a view to foster the establishment of new enterprises calculated to benefit the country, has on various occasions admitted free of duty the machinery and other supplies necessary for the respective undertakings. In the town of Valencia, for instance, a factory for making cloth stuffs has been established, and not only the machinery, but also the iron roofing, boards, nails, tar, and paints, used in the construction of the buildings, were freed from all duty in order to encourage the new enterprise. In another case, machinery for the manufacture of paper from native grasses was introduced free, and American manufacturers would do well to study the field thus opened, to extend their trade, and to construct their machinery to suit the requirements of the country that is likely to become a very good customer.

As long as the native cedar can be procured to make boards for home consumption, the trade in white and pitch pine boards has no future in store here; neither will scantlings be required here, for the native woods supply to excess the requirements of the country. A great deal of hard wood good for ship-building could even be exported from here if the matter was taken in hand with energy.

American dry-goods, calicoes, prints, &c., have been introduced here, fighting their way against the customary importations from England and Germany.

From France, Spain, and Italy the usual staple goods, as claret, champagne, vermouth, absinthe, brandy, Malaga wine, sardines, olive oil, raisins, vermicelli, macaroni, &c., still continue to be introduced. The duty on brandy is excessively high, while claret is admitted free.

The chief stock of cutlery comes from England as of old, but America

has good chance to take her share, if the attempt be only once made to introduce goods of that class.

Corn or maize being at times very cheap here and ale or beer very dear, viz, 50 cents per quart bottle, it is surprising that no brewery has ever been established here, for it is a well known fact that corn can produce as good ale as any barley in the world. With the preference the population exhibits for ale, such an undertaking ought to be very profitable, and might be combined with an ice-house, which is very much wanted here. There is no duty on the importation of ice, and the small quantities that are brought here now and then sell like hot bread at 25 cents per pound.

Some very good photographic galleries, under native management, and provided with the last improvements from the United States, have of late produced pictures that are worthy of comment.

TRADE CONNECTIONS WITH THE INTERIOR.

Maracaibo is connected with the interior by two flat-bottomed paddle steamers, that go up the Rio Catatumbo and the Rio Escalante, besides the connection made by the different sailing craft that ply between the said city and the various outports all around the lake. From the river port of Encontrados in the Rio Catatumbo, up to which point the steamers go, the traffic is carried on higher up the stream in flat-bottomed river boats, called "bongoes," that are poled along in quite a primitive style by a crew of from 15 to 20 men. These boats have a carrying capacity of 100 to 350 cargoes, each cargo being composed of 2 bags of coffee, averaging together 250 pounds weight, more or less, and meaning the load that one beast can carry.

Of this class of vessels there are about 40 employed continually, making two trips per month from Encontrados to San Buenaventura and Villarnizar, river ports in the province of Tachira, where they discharge the different kinds of merchandise brought from Maracaibo and take in the coffee, quinia, and hides brought from the province of Santander of Colombia and from San José de Cúcuta, which is connected with the said river port by a railway in course of construction, and forms the main depot for the purchase of produce of both the border States of Venezuela and Colombia.

Following the coast of the lake in a southeasterly direction, and at a distance of 10 English miles by sea, is situated the mouth of the Rio Escalante, the river in size after the Rio Catatumbo, and navigated by another one of the above-mentioned paddle steamers, running once a week as high up as the port of Santa Cruz, and making connection with the interior by way of Merida, the overland route joining the Rio Onia, and following its course towards Bailadores and the Rio Chama to go to Estangués, Egido, and Merida.

The lake of Maracaibo is a sheet of water of a great extent. From the bar near the island of "Bajo Seco," there is a distance of 25 English miles to Maracaibo, the channel varying in width from 2 to 4 miles. From Maracaibo it stretches in a due southerly direction, and has a length of 120 English miles up to Gibraltar, the capital of the canton of the same name. The greatest width of the lake is 60 miles, the average width being 50 miles. The depth of water along the shore is throughout from 2 to 3 fathoms, increasing towards the center of the lake. Vessels of about 250 tons can anchor at all the established landing places at the distance of half a mile from the shore; at some places, like Ceiba and Moporo, they can even come closer. In that part of the lake the

water is always fresh, since over 100 streams and rivers are continually emptying into it, but on the northern end it contains about 10 per cent. of salt, owing to the influx of the tides.

Up here the color of the water is also as blue as that of an Alpine lake, changing into green and yellow near the bar. The shores of the lake approaching from the ocean are entirely flat, covered by mangroves and cocoanut trees, with here and there an isolated stock farm amongst them. Coming nearer to Maracaibo they rise gradually and form cliffs of about 30 feet in height, getting after that lower again, and appear throughout as an immensely large plain, densely covered with forests and for the most part inundated.

LAKE MARACAIBO BAR.

The great future in store for Maracaibo depends on the successful removal of the bar at the entrance of the lake, which limits the trade to the smaller class of vessels drawing under 11 feet of water. Since the adjoining country is covered with heavy timber that could be used for that purpose, the plan appears quite feasible and within the bounds of a moderate expenditure. When accomplished it would open the lake of Maracaibo to the commerce of the whole world, since vessels of any size may navigate the lake up to its extreme southern end to carry away the manifold mineral and agricultural productions this rich country can furnish, converting Maracaibo into the richest port of Northern South America.

AN AMERICAN SCIENTIFIC EXPEDITION.

To accomplish this, I have been corresponding with well-known engineers of our country, and I am trying to start, during the coming month of November, or December, an expedition from the United States to Maracaibo, consisting of a corps of engineers, a photographer, a botanist, a geologist, a physician, and a reporter of one of the leading newspapers. From official quarters of this State, as well as of the Government of Caracas, I have well founded hopes that assistance will be rendered, and I am fully convinced that this exploration party will prove to be of great value towards the development of the mineral and other resources of the States surrounding the lake of Maracaibo, for the benefit of our country and for the advancement of geographical knowledge in general.

Hoping that my report on this consular district will meet the approval of the Department of State, I beg to add that, in making my observations, I have kept myself free from all prejudices of whatever nature.

E. H. PLUMACHER,
Commercial Agent.

UNITED STATES CONSULATE,
Maracaibo, Venezuela, July, 1880.

GOLD AND SILVER COIN AND BULLION IN CUBA.

REPORT OF CONSUL-GENERAL HALL, OF HAVANA.

In reply to the Department circular requesting certain information respecting the amount of gold and silver coin and bullion in Cuba, I

had the honor to inform the Department, by my dispatch No. 806, of the 6th of June of the same year, that I had given the director-general of finance a translation of the several interrogatories accompanying the instructions, and that that officer had promised to furnish me with as full information upon the subject as the limited statistical resources of his department would permit.

Up to the present the promised information has not been received, and I have now to acknowledge the receipt of the Department circular, dated the 30th April ultimo, transmitting other interrogatories, and to which I append answers based upon the information I have been able to gather from various sources in the absence of any published data upon the subject:

1st. What is the amount of gold coin and bullion in the treasury, in the banks, and in circulation?

Answer. There is no gold or silver bullion in the island. The amount of gold and silver coin in the public treasury should be considered nominal only, consisting of the small balance carried over from day to day. It is well understood that the resources of the treasury of Cuba during the past ten years have been so restricted, that it has been without the means to meet many of the most urgent necessities of the government, as, for instance, the payment of the military and naval forces employed in and about the island.

The amount of gold coin in the banks of Havana is given in the bank reports as follows:

December 31, 1879.....	\$8,657,000
March 31, 1880	9,849,000
April 30, 1880	10,522,000

The amount of gold coin in circulation in the island on the 30th April ultimo, exclusive of the amount in the banks, is estimated at from \$30,000,000 to \$35,000,000.

2d. What is the amount of silver coin and bullion in the treasury, in the banks, and in circulation?

Answer. It is estimated that the amount of silver coin in the island may be near, but will scarcely exceed, \$1,000,000, in circulation principally in the eastern part of the island. There have been considerable importations during the past year of Mexican dollars, but there appears to be great opposition to receiving such into general circulation in sums exceeding two dollars.

3d. What is the amount of outstanding paper currency?

Answer. The bills of the Spanish Bank of Havana are the paper currency of Cuba; the amount in circulation on the 30th of April, 1880, was, according to the bank statement, \$57,857,000, of which \$44,900,000 have been issued for account of the government. This currency is irredeemable, and after the 1st of July, 1880, will not be received for any dues whatever of the government. Its value on the 30th April ultimo, relatively with the gold (*peso*) dollar of Cuba, was 44 cents, or about 41 cents in gold coin of the United States.

4th and 5th. What are the amounts of gold and silver produced annually from the mines?

Answer. There are no mines of either gold or silver, although both minerals are known to exist in the island.

6th. What is the amount of gold annually coined, imported, and consumed in the arts and manufactures?

Answer. There is no mint for coinage in Cuba. The specie imported

into the island during the past four years is stated to be, in round numbers, as follows:

1876	\$6, 169, 000
1877	9, 414, 000
1878	9, 011, 000
1879	4, 712, 000
1880 (from January 1 to April 30)	5, 257, 000

The data in regard to the amounts exported are very imperfect, but as the greater part of both importations and exportations of coin are of Spanish doubloons, having here a compulsory value of some seven per cent. more than abroad, and are governed entirely by the rates of foreign exchanges, it may be asserted that the amounts exported and the amounts imported during any year are about equal.

For instance, during the years 1878 and 1879 the rates of exchange on New York were frequently as high as 10 per cent. premium. While those rates prevailed coin was exported; when the rates declined to 5 and 6 per cent. premium, the same coin was sent back to the island. The value of the Spanish doubloon fluctuates in the New York market at from \$15.60 to \$16.25, according to the rates of exchange between Havana and that city.

The amount of coin consumed in the arts cannot be ascertained; it must, however, be very small, there being no important establishments of that nature in the island.

1st additional interrogatory. What are the standard coins in circulation and what denomination of coin is the unit of money of account?

Answer. The standard coins in circulation in Cuba are the gold ounce or doubloon, of \$17 (*pesos*), and its fractions of half, quarter, eighth, and sixteenth. (In the United States Treasury Department's circular of December 20, 1873, the unit of this coin is termed "*peso*.") A more modern gold coin of Spain of the denomination of \$5 has recently been introduced; it is the "*Isabelino*" and "*Alfonsino*," and is current here at \$5.30.

The silver coins of Spain in circulation or known in Cuba are the dollar (*peso*), the *escudo*, the *peseta fuerte*, the *real de plata (fuerte)*, the *medio real fuerte*, the *peseta sencilla*, the *real sencillo*, the *medio real sencillo*; the latter is also known as the "*real de vellon*."

The unit of the money of account as established by royal order of April 15, 1848, was the *real de plata* of 12½ cents, or the eighth of the *peso*; in 1866 the *escudo* of 50 cents, with its millesimal divisions; later the *peseta* of 20 cents, a coin of identical value with the French *franc*, has been adopted. All of the foregoing have appeared at different times in official estimates and in the government accounts, creating much confusion.

But the unit of money of account, now generally adopted and recognized by the government of Cuba, is the gold dollar (*peso*) of 100 cents, and although silver of *Spanish* coinage is received at the treasury in whatever amounts presented, it is seldom used except as subsidiary coin, and for sums not exceeding two dollars.

2d additional. What is the legal standard of value, gold or silver, or both metals, at fixed rates?

Answer. The legal standard of value is the gold dollar or *peso*; the fixed values of the different denominations of gold coins are as follows:

The ounce or doubloon	\$17 00
The half doubloon	8 50
The quarter doubloon	4 25
The eighth doubloon	2 12½
The sixteenth doubloon	1 06¼

3d additional. If both gold and silver are the standard of value, what is the ratio of the two metals in the coinage?

Answer. All the standard coins of Cuba are made in Spain; none in the island.

4th additional. What is the exact standard weight and fineness provided by law for the coin representing the monetary unit, or, if more convenient, the exact content of such coin in pure gold or pure silver?

Answer. The Spanish doubloon or ounce is of the past century; none has been coined since the reign of Ferdinand VII; the weight of those coined since 1785 is represented to be 416.65 grains troy weight of 21.2 carats fineness. There are, however, a great many of these ounces that are said to have been coined outside of Spain and fall greatly short of the above standard.

5th additional. In compliance with this interrogatory a copy of the royal order of October 13, 1863, governing mining operations, is transmitted herewith.

I have been unable to obtain a copy of the law or royal order fixing the coin standard of Cuba.

HENRY C. HALL.
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Havana, June 19, 1880.

BRITISH VS. AMERICAN TRADE WITH THE BAHAMAS.

REPORT BY CONSUL M'LAIN, OF NASSAU, N. P.

I have the honor to inform you that a line of British steamers has been established to ply between London and Nassau, via the Bermudas, the pioneer vessel of which, the *Solway*, arrived in this port on the 25th instant, having left London May 1, and Hamilton, Bermuda, on the 21st.

Two iron steamers, the *Solway*, 792 tons, and the *Himalaya*, 804 tons, will perform a monthly service for the present, they being arranged and intended mainly for the transportation of freight, their accommodations for passengers being limited.

Unquestionably the fact that the trade of these islands with Great Britain has for several years past been rapidly declining, whilst that with the United States has been proportionally increasing, has had much to do with the inauguration of this new enterprise.

For a number of years the only direct communication between the Bahamas and the mother country has been by a line of small topsail schooners, which made some six or eight trips during the year, consuming from forty to fifty days in the voyage, and arriving at very uncertain periods.

This arrangement was a very unsatisfactory one to the merchants and dealers of the colony, who naturally turned their attention to the United States, with which frequent and reliable communication is had by means of numerous sailing vessels, as well as by a line of American steamers, subsidized by the colony and required to make not less than eighteen regular trips per annum between New York or some southern port and Nassau. This steam service is now performed by R. W. Parsons, esq., and Messrs. C. H. Mallory & Co., of New York.

To turn back the bulk of the trade of this colony into its old channels with England is one of the hopes cherished by the founders of the new

line, which attempt, however, will, in my opinion, prove entirely abortive, to which conclusion I am led by several considerations.

In the first place, American goods and manufactures have already acquired a strong foothold in this colony, the merchants and their customers having become acquainted with them, and having found them equal and often superior to English articles of a similar description. Our prints, denims, drills, woolen goods, and cottons, bleached and unbleached, are popular on account of their cheapness, better finish, and neater patterns. For American hardware, tools, rope, paints, canvas, &c., there is a steady and increasing demand in the colony. Our flour, corn, meal, hominy, potatoes, salt meats, petroleum, lumber, cattle, and canned goods monopolize the market to the virtual exclusion of all others. It will be a difficult matter for the mother country to win back this trade.

Secondly, the proximity of the United States to the Bahamas will influence a continuance of trade, just as in the first instance it induced it. London is at least four times as far from Nassau as is New York, whilst a steam voyage from the latter port will consume about five days, against nearly thirty from London or Liverpool via Bermuda. This difference in distance makes a difference in freight charges that is a large item of itself.

Again, the matter of exchange operates in favor of the United States. Bills on London are scarce and high; drafts on New York are more easily obtained and at a lower premium, since a number of New York houses are engaged in the Bahama trade, whilst during the winter months large quantities of greenbacks and drafts are put into circulation here by the hundreds of American visitors and invalids who seek in the genial climate of the Bahamas a relief from the frosts and snows of their northern homes.

Lastly, the fact that the United States are, and will continue to be, the best customer of the Bahams, will tend to keep the trade of that colony with us. Everything which the Bahamas produce finds a ready market in the United States, and being near at hand, the expenses of marketing are comparatively small.

Sponge is an important article of export, and less than usual is going to England this year, while more than ordinary finds its way to the American ports. Nearly all the dye-woods, shells, and salt go to the United States at present. The other standard articles of export, viz, pineapples, oranges, bananas, cocoanuts, lemons, &c., owing to their perishable nature, must always continue to find their only reliable market in the States.

In view of these facts, I do not conceive how the new line of steamers can be made profitable to its owners so long as Nassau is made its southern terminus. It may be compelled eventually to extend its route to Cuba and Jamaica, where perhaps it would pay; or, failing in that, the owners may fall back upon that *dernier ressort* of British steamship lines generally, a fat subsidy from the Imperial Government. In neither event, however, can I see how the mother country is to regain its lost trade with the Bahamas.

THOMAS J. McLAIN, JR., *Consul*.

UNITED STATES CONSULATE,
Nassau, N. P., May 27, 1880.

THE EXPORTS OF JAMAICA DURING 1879.

REPORT BY CONSUL HOSKINSON, OF KINGSTON.

The publication, in a recent number of the Jamaica Gazette, the official organ of this colony, of the returns of exports for the September quarter of the year 1878-'79, enables me to compare them with the returns for the preceding year, 1877-'78. In every quarter, except the first, there is a perceptible gain; the figures being, respectively, for—

	1878-'79.	1877-'78.
December	\$783,846 65	\$1,124,750 34
March.....	1,839,658 66	1,713,450 85
June.....	2,075,445 45	2,010,682 60
September.....	1,374,669 45	861,900 94
Total	6,073,620 21	5,710,764 73

There has thus been an increase of \$362,855.48 in the latter year. But, however satisfactory this may be in itself, it should not be forgotten that it is but a partial recovery of lost ground. The exports for 1875 were stated at \$6,864,120.38, and did not fall much below that sum until 1877-'78. The increase last year has been almost entirely due to the largeness of production, which, in the case of most articles, has outweighed exceptional lowness in price.

The value of sugar exported during the year was \$2,024,434.80, as against \$1,844,437.56 in the preceding. These figures differ slightly from those previously given, but are taken as they appear, first in the Gazette, and afterwards from the Blue Book for the year. Had the price, as given in the Blue Book, been as high as in 1877-'78, the amount would have been higher by nearly \$50,000. Most persons who recollect that 1877-'78 was an exceptionally bad, and 1878-'79 a fairly good year for the sugar crop, will be surprised at the small difference in the apparent value of the exports of the article. Several causes can be assigned for this.

The price of the commodity was very high in the latter part of 1877, owing to the failure of the beet crop. All the sugar which went into the market in the December quarter, a larger quantity than in the corresponding quarter of 1878-'79, was sold at a high price, and raised the average for the year.

The crop in 1879 again, like that in 1877, and unlike that in 1878, has been late in some parishes; and much of the sugar made would not have been exported before the 30th of September. The value of the export of rum in the year amounted to \$1,032,378.77. In the preceding year the amount was \$953,094.29. Here, again, the quantity was larger, and the price lower, than all through 1878-'79. The same reasons which account for the smallness of the income in the case of sugar apply in that of the other commodity also.

COFFEE.

There has been a large increase in quantity, coupled with a large decrease in the aggregate value. The number of hundred weights exported was 96,711; while in 1877-'78 it was but 83,872. The value in

that year was \$1,318,505.17. If the price had continued the same in 1878-'79, the value of the export would have exceeded 1,500,000. It fell, instead, to \$1,098,884.89. In spite of this discouragement, however, it is satisfactory to know that the production of coffee increases year after year.

It is larger now than it has ever been since the abolition of slavery; and we may hope that with the cession of the compulsory-labor system in Java, and the opening of the markets of the world, the price will rise, and Jamaica will produce it in quantities as large as she did at the beginning of the century.

LOGWOOD.

This is the only one of the larger products which improved both in quantity and price. As it is not an article of cultivation, it is evident the higher price was the cause of the increased production. The value of the export was \$878,631.97, as against \$498,952.51 in the preceding year.

PIMENTO.

All exports, save those already enumerated above, are reckoned among minor products, and of these, at present, pimento stands at the head of the lists. In 1878-'79 there was exported of this commodity to the extent of \$392,822.27 in value, the export for 1877-'78 having been \$367,187.95. This increase, also, is due entirely to more abundant production, the price having been slightly lower. Pimento, though not any more than logwood an article of cultivation, is not a product likely to be ever exhausted, and if the prices of the last two years continue or improve will probably remain at the present aggregate value for some time to come.

FRUIT.

The fruit trade comes next in importance, and would really be at the head if the figures given to the customs were the same as certified to in the invoices. It nearly all goes to the United States.

Of bananas the export amounts to \$160,078.64, a small increase upon that of the preceding year. Oranges, the fruit which comes next to bananas in importance, amounted to \$31,992.37, against \$34,892.80 the previous year. But this is manifestly an underestimate, since the declared value of oranges from this port alone for the year ending September 30, 1879, was \$35,769.94. On the whole, however, the fruit trade, though still improving, has not made such vigorous strides in 1878-'79 as in the year preceding.

GINGER.

In ginger there was a small increase in aggregate value, owing to improvement in price rather than increase of quantity. The figures for the two years were, respectively, \$85,246.47 and \$88,726.02.

TOBACCO.

Tobacco continues to improve, having gone up from \$30,644.35 to \$44,927.52. As the consumption of this commodity at home increases at least *pari passu* with its exportation abroad, these figures very imperfectly represent the spread of the industry.

COCOANUTS.

A similar improvement is noticeable in cocoanuts, the export of which has become important within the last few years. In 1877-'78 the value was \$44,839.93, and in 1878-'79 it reached \$63,099.03. The demand for the pulp, after the oil has been extracted, for the feeding of horses has created a new branch of industry in some countries.

COCOA.

The demand for Jamaica cocoa which sprang up last year seems still to continue, though there has been some diminution in the export, the figures being \$38,144.42 for 1877-'78, and \$29,632.11 for 1878-'79. It will be noticed by comparison of this with the exports of former years that the relative value of sugar and rum to other exports continues to decrease. In 1876 it was stated in the legislative council of this island at two-thirds of the whole, and was really four-sevenths; in the last year it has been less than half. In comparing 1875 with 1879 it will be found that while the aggregate value of all minor exports was about the same, that of sugar and rum had fallen off about \$775,000.

GEO. E. HOSKINSON,
Consul.

UNITED STATES CONSULATE,
Kingston, Ja., March 10, 1880.

TRADE OF ANTIGUA WITH THE UNITED STATES.

REPORT BY CONSUL JACKSON.

I have the honor to inform you that a most gratifying increase of trade exists between Antigua and the United States.

The exports from this point to the United States, from the 31st of December, 1878, to the 30th of June, 1879, amounted to the sum of \$170,533.41; for the same period of time for 1880, they amounted to the sum of \$364,181.59. The increase would have been greater if conveyance could have been found for the produce; some sugars remained in store awaiting transportation for nearly ninety days.

The muscovado sugars of Antigua are eagerly sought, because of their excellent properties for refining purposes. They rank the best of all the production of the Leeward or Windward Islands. The prices obtained in the American market are much better than in the English, and nearly the whole of the production would find an American market if the producers were wholly out of the clutches of the English merchant; as it is, they are rapidly freeing themselves.

The imports from the United States to this point are increasing in a marked degree also. This office spares no pains or expense to place American goods in this and neighboring markets, and it has the satisfaction of seeing them highly appreciated.

The subject of imports will be embodied in a dispatch of a later date, giving particulars.

CHESTER E. JACKSON,
Consul.

UNITED STATES CONSULATE,
Antigua, July 10, 1880.

AMERICAN AND BRITISH TRADE WITH ANTIGUA.

REPORT BY CONSUL JACKSON.

I have the honor to inform you that you will find inclosed a statement compiled from the customs of this port, showing the several quantities and relative increase of the principal imports to this island from the United States of America for a period of time extending from the 1st of January, 1876, to the 31st of December, 1879.

The greatest displacement in favor of the United States and against England can be found in the articles of hams, bacon, and tongues. The imports from England for the year 1876 of these articles amounted to 11,564 pounds, while from the United States for the same period of time the imports amounted to 5,540 pounds. The imports of the same articles from England for the year 1879 had decreased to 8,674 pounds, while from the United States they had increased to 54,268 pounds.

Also find inclosed a leading editorial from one of the most prominent newspapers published here, relating to individual efforts put forth by the subscriber; also, stating the present situation of the trade between Antigua and the United States.

In introducing novelties of agricultural machinery and other wares, it is necessary to have honest workmanship, square dealing, great patience, and a part surrender to time-honored customs and prejudices.

CHESTER E. JACKSON,
Consul.

UNITED STATES CONSULATE,
Antigua, September 9, 1880.

Statement of the principal imports at Antigua from the United States, showing quantities and relative increase thereof, from January 1, 1876, to December 31, 1879.

Articles.	1876.	1877.	1878.	1879.
Bread and biscuit.....pounds..	130, 191	299, 063	371, 754	278, 340
Beef.....do....	6, 000	13, 000	19, 050	36, 611
Butter.....do....	5, 127	12, 203	6, 535	17, 908
Corn.....bushels..	14, 128	30, 926	22, 510	33, 426
Cheese.....pounds..	13, 414	16, 781	19, 216	28, 776
Flour.....barrels..	9, 115	11, 355	10, 728	13, 800
Hams, bacon, tongues.....pounds..	5, 540	8, 510	25, 528	54, 268
Lard.....do....	15, 935	21, 110	28, 010	39, 083
Oil, kerosene.....gallons..	9, 816	10, 575	16, 200	19, 156
Pork.....pounds..	245, 125	284, 900	339, 500	396, 880
Soap.....do....	4, 500	10, 000	3, 312	13, 080
Pitch-pine.....feet..	71, 619	183, 347	188, 799	492, 989
White-pine, spruce.....do....	500	.....	18, 878	495, 257
Shingles.....number..	251, 682	996, 503	2, 219, 623	1, 294, 900
Staves.....do....	113, 958	171, 899	206, 264	451, 739

COMMERCE OF ANTIGUA WITH THE UNITED STATES.

[From the Antigua Observer of August 23, 1880.

The commercial relations between these islands and the United States show a yearly increasing expansion, which to those accustomed to watch the signs of the times indicate that by and by not only will, as at present, the bulk of our imports come direct from those States, but that almost all of our produce will find its way thither. Nothing, indeed, stands now in the way of this latter consummation but the fact that several

of our sugar properties are indebted to parties in England, and in consequence compelled to send their crops to the United Kingdom; but it is to be hoped that most of these are in a more or less rapid course of liquidation, and in the case of the few, if any, that may be hopelessly involved, it is evident that sooner or later they must change ownerships and become the property of men who will be free to avail themselves of the best markets. In the nature of things such markets will always be found in the United States and in the British Provinces. Besides being in close proximity to these colonies, their vessels supply us week by week with the principal necessities of life, with the food we eat, with the material with which we build our houses, and with the staves that we convert into sugar casks, and to complete the course of trading they require to take home in return freights as much of our various staples as we can give them. Probably, also, the American people are at the present moment the largest consumers of sugar in the world. At the commencement of the present century the United States used every year barely 5 pounds of brown sugar per head, while in the years from 1870 to 1878 we find that they consumed annually 34 pounds per head; and as the population of the States is yearly increasing in numbers, as well as in wealth, the capacity for consumption of an article which is at once a necessity and a luxury must necessarily advance in a similar ratio. It is, indeed, not without the region of probable events that, indisposed as the British people and Government evidently are to give fair play to our colonial industry, the West Indies will shortly be in a position to leave them almost entirely to the tender mercies of the beet-root manufacturers. Nothing but the lack of independent capital in the colonies stands in the way of the accomplishment of this idea; but, as we have shown in a former article, the number of estates owned absolutely by persons of means in our own island is yearly increasing.

It is interesting in this connection to note the progress which our trade with the United States has made within the last few years, and we have been kindly supplied with the following particulars. In 1874 the value of the exports to the United States barely amounted to \$25,000, while this year it has already reached the very respectable figure of \$455,398, and will, before the present week closes, amount to over half a million of dollars. It is but right to mention that 1874 was a year of very bad crops here, and it would have been more satisfactory had we at hand the value of the sugar similarly exported each year in succession; still the contrast is very remarkable, and serves to show that the trade with America is being largely developed, both imports—which have more than doubled since 1874—and exports demonstrating the pleasing fact. In regard to our imports, it is pleasing to learn that the energetic American consul at this port, Mr. Chester E. Jackson, is interesting himself to introduce among us a variety of useful articles of American manufacture, among which are agricultural implements, for which the Americans have become so famous. Confessedly we are long behind the age in the use of labor-saving machinery, a fact to be wondered at, considering the great difficulties attending our labor supply; still we go on in almost precisely the same groove from year to year, depending entirely upon capricious hand-labor for many of those agricultural operations which elsewhere are so greatly facilitated by the use of machinery. If, then, in the course of the growing trade between this island and the neighboring continent, we should learn to take advantage of the inventive mechanical enterprise of our American cousins, and be thus able more profitably to extend our cultivation of those products for which they are such eager customers, we shall more than ever have reason to value and encourage the commercial dealings which have led to it.

GUADELOUPE AND ITS DEPENDENCIES.

REPORT BY CONSUL BARTLETT, ON THE TOPOGRAPHY, HARBORS, PRODUCTS, LIGHT-HOUSES, LABOR, FINANCES, AND DUTIES UPON IMPORTS AND EXPORTS OF GUADELOUPE AND ITS DEPENDENCIES.

GUADELOUPE

Is one of the largest and most fertile of the group of islands called the Lesser Antilles. The island is of an irregular form, and is 444 kilometers in circumference, and is divided into two parts by a natural canal of about six miles in length, called the "Rivière-Salée," connecting the harbor of Pointe-à-Pitre, at its southern entrance, with the bay of Port Louis and the sea at its northern entrance. The width of this canal varies from 30 to 120 meters; the shallowness at both entrances prevents its being navigable for vessels of more than 8 feet draught.

On the western side of the Rivière-Salée is that part of Guadeloupe known as "Guadeloupe proper," which is of a volcanic nature, with a chain of high mountains running north and south, among which towers one named the "Soufrière," with an altitude of about 1,600 meters above the level of the sea. This "Soufrière" is of a majestic and picturesque aspect, on the summit of which exists a volcano which is not yet extinct, and in the fall of 1879 there occurred two eruptions.

At the southwest of "Soufrière," and almost at its base, lies the town of Basse-Terre, in latitude $15^{\circ} 59' 30''$ north, and longitude $64^{\circ} 04' 22''$ west of the meridian of Paris.

BASSE-TERRE

Is the capital of Guadeloupe and its dependencies, and has some very fine government buildings. It is the seat of a bishopric, of a court of appeals, of a court of assizes, of a tribunal de première instance, of a justice of the peace, of a chamber of commerce, and a chamber of agriculture. It also has a military and civil hospital, a house of correction, two convents, and two institutions of learning, one for young gentlemen and one for young ladies. Its harbor is protected by Fort Richépance and several batteries, and is a safe anchorage for vessels during the regular trade winds which prevail in these latitudes the most of the time; but with wind from the south to the northwest it is very unsafe, and it would be advisable for captains of vessels to get under way and proceed to the harbor of Pointe-à-Pitre or to sea.

The communication between Basse-Terre and Pointe-à-Pitre by land is by two mail coaches. A small steamboat plies between the two cities biweekly, taking the northern route, and passing through the "Rivière-Salée," calling at the different communes on the way, leaving and taking the mail and passengers. To the eastward of the "Rivière-Salée" is that part of the island of Guadeloupe known as Grande-Terre. It is generally low and of a calcareous nature.

POINTE-À-PITRE

Is situated on the western part of Grande-Terre and is the largest city and principal mercantile emporium of Guadeloupe.

On the 8th day of February, 1843, the city was destroyed by a terrific earthquake, which was followed by an awful conflagration, and on the 18th of July, 1871, another conflagration destroyed two-thirds of the city, but, owing to its desirable location, the town is now almost entirely rebuilt.

Its harbor is one of the first in the world and can shelter ships of the line of the first class. It is sheltered from winds from all directions, and the entrance is protected by Fort La Union and several batteries. The city of Pointe-à-Pitre is built on low, marshy ground. Around the city proper has been dug a canal named "Canal Vatable," in honor of the governor under whose governorship it was dug.

The ebb and flow of the tide in the harbor, never exceeding $1\frac{1}{2}$ feet, causes the water in this canal to remain stagnant and to exhale offensive odors, making its neighborhood very unhealthy. The land beyond this canal is low and boggy, and most always overflowed from draining of the surrounding hillocks, and more especially so during the rainy season. The mayoralty, nevertheless, in view to fill up these bogs, have carts which daily take the garbage and other cleanings from the city proper to these places. These cleanings being mostly of a vegetable

nature, thrown into and rotting in these small swamps, generate an effluvia which I consider deleterious; so much so, that I have noticed that at least three-fourths of the deaths on record occur in that neighborhood.

The city proper, I must state, is more healthy and was in past years filled up with stones and earth. The streets are all macadamized. They are carefully and continually kept in repair, are very dry, swept every morning, their gutters cleaned, and the offal, which is ordered to be deposited in front of each tenement, is taken away by the town carts to these bogs and swamps. All the household excrements of the city are taken away mornings and evenings to the quays, and thrown into the harbor. This improper usage is assuredly conducive to unhealthiness, as the smell arising therefrom is very offensive.

The residents of this city are to a great extent sufferers from malarial, bilious, intermittent, and pernicious fevers, which prevail here the year round. In the fall and winter of 1879 and 1880 the yellow fever prevailed in this city and also at Basse-Terre. I myself was sick with fever at that time, the symptoms of which strongly resembled those of yellow fever. The population of Pointe-à-Pitre, according to the last census taken, is 22,919, including the floating population.

The public buildings are as follows: One military and one civil hospital, a house of correction, one asylum for children, and several schools, both public and private, court of assizes, tribunal première instance, chamber of commerce, chamber of agriculture, one fine catholic church, two masonic buildings, one for the white lodge and one for the colored, and a theater.

MOULE.

On the eastern shore of Grande-Terre is situated the city of "the Moule," and lying, as it does, to the windward side of the island, its harbor is very bad, and is only protected by a reef which is partially under water, and the entrance to the same is less than a cable's length in width, with a rough and rocky bottom. Vessels often strike on the bar, either in entering or leaving the harbor, and wrecks are of frequent occurrence.

Vessels are often detained from ten to twenty days outside the harbor, being unable to enter in consequence of the heavy swell on the bar, and, for like reason, are often obliged to remain in port for that length of time after they are ready for sea.

Vessels lying in port are obliged to moor head and stern, one anchor on the reef and the other cable on shore. Even in the smoothest time there is quite a swell, and, when there is any wind, vessels roll very badly. Ships, on approaching the harbor, should observe the following signals, which are hoisted on a flag-staff at the office of the captain of the port: A square red flag at the mast-head indicates that it is impossible to enter the harbor, and to keep well in the offing; the same flag at half-mast indicates that the entrance is not practicable, but may be so at a moment's notice, and consequently to keep as near the harbor as they can with safety.

The pilot-flag, which is a square blue flag with a white square center, when hoisted at the mast-head, denotes that the pilot has left the shore; the flag remains hoisted until the harbor-master makes signal to enter the harbor, which he does by hauling down the pilot-flag and hoisting a white flag with a blue cross in its place, which is a signal to enter the port.

When the pilot is on board and the red flag is hoisted at mast-head

it recalls him on shore, and means that the ship is to keep well in the offing and return next morning.

Ships should not go the westward of the port, for there is always a current in towards the shore, and it is usually calm from five to six o'clock in the evening.

The city of the Moule is situated about 30 kilometers from Pointe-à-Pitre; the two cities are connected by a macadamized government road, which is very level. A mail post and a diligence ply between the two places every day, morning and evening.

"The Moule" is the second town in size of Grande-Terre, and has a population of about 10,000, and was formerly the seat of a seneschal.

The public is agitating the question of a railroad to connect the two cities; the route has been surveyed by the colonial government, and the estimated cost of the road is 3,080,000 francs. The general council, which convened in special session on February 13, 1879, voted a subsidy of 40,000 francs to be paid annually to any party or parties that would build the road and put it in running condition. The proposed route from Pointe-à-Pitre to the Moule, as surveyed by the government, is very level; consequently there would be no heavy grades, neither would there be any deep cuts or fills to make, and there would be no expense for bridges, as there are no rivers or streams of any note.

MATOWBA.

There is in Guadeloupe proper a small village called Matowba, which is a popular resort for the inhabitants of the island during the hot and sickly season. Matowba is situated on the western slope of "Mount Soufrière," and is about seven hundred meters above the level of the sea. Below Matowba, but in the same commune (St. Claude), the government has erected some fine buildings—a military hospital, barracks, and a residence for the governor of the island, where, on account of the healthfulness of the location, he resides the most of the time.

The garrison, on the approach of the hurricane or hot season, is sent to this place, only retaining in the town those required for service, but removing them alternately to and from this place, which is called "Camp Jacob." It was built under the administration of Governor Jacob.

There are some mountain streams and brooks in this part of the island, in which it is thought the American trout could be successfully introduced; and the general council took action in this matter, and voted five hundred francs to be expended in procuring the trout spawn; this sum was placed in my hands with request to procure the spawn for them.

I have ordered of the Smithsonian Institution, through Professor Baird, the spawn or young fish, whichever he thought best to send, but as they have not yet arrived I cannot report as to the success of the undertaking.

About two kilometers from "Camp Jacob" as you ascend "Mount Soufrière," and at the terminus of the government road, is situated the coffee plantation of a French gentleman, who resided in the United States about eighteen years, and is a graduate of Yale Medical College; he was also post surgeon at Oakland, Md., during the rebellion; on his return to this island from the United States he brought several American plants, among which was the strawberry. It has proved a decided success, the vines bearing from January until July an abundance of fine fruit, equaling, if not surpassing in size and flavor, those raised in the United States. His garden is very large and is the finest on the island.

By invitation of this gentleman, whose acquaintance I made during a session of the general council at this place, of which he is a member, I visited him at his home. At the time of my visit I was just recovering from a fever and was very weak and debilitated; on arriving at his place, notwithstanding the fatigue of the journey, I felt very much revived and strengthened.

ASCENT OF MOUNT SOUFRIÈRE.

The next day I visited a hot mineral spring some distance from the plantation, called "Bains Jaunes," in which I enjoyed a refreshing bath; and a few days after my arrival I had so far regained my strength, owing to the invigorating and health-giving atmosphere of that section, that I decided to ascend "Mount Soufrière." One morning, accompanied by the son of my host and two coolies, who were kindly furnished me as guides, I began the ascent.

Beyond the limits of the coffee groves we came upon the border of the high woods, where one must go to see the vegetation of the tropics in its greatest perfection of giant growth and luxuriance. As we set foot over the sharply defined line of demarkation, we enter a gloomy arch beneath a canopy of leaves; the trail is sinuous and slippery, and winds beneath huge trees, one of which I measured two feet above the ground and found its circumference to be about 20 meters. Fifty or sixty feet up, the broad-armed limbs spread over a vast area, and from these limbs depend attractive and wonderful ropes of nature's making. They are of all sizes and twisted into every conceivable shape; some like huge hawsers and cables, and others small as fishing lines and stretched as straight and taut as the rigging of a ship; surrounded by this network, the trunks would be barely visible.

As we ascend, the trees diminish in size. We hear the murmur of falling water which we cannot see for the rankness of the vegetation. We soon reached the stream, however, and found it so hot that vapor arises on this not too cool atmosphere. It is sulphur-impregnated, as the discolored leaves abundantly testify. The luxuriance of the vegetation here is marvelous, and it is impossible for me to describe the beauty of the tropical trees and ferns that overhung and spanned this tepid stream.

A few rods further up we came upon a basin of colorless water, walled round with blocks of lava, the overflow of which formed this stream. Here we commenced an ascent that for steepness surpassed all former paths; we had to lift ourselves up by broad steps, clinging to roots and trees for aid. Emerging from the darkness of this tunnel-like passage, we came upon another growth of vegetation, where the trees were dwarfed to shrubs and were so entwined and matted together that they formed a complete net-work. Here we found the paths washed into deep cistern-like cavities, down which we must descend on one side only to climb out at the other.

For four hours and a half, with many pauses for breath, we mounted upward, until at last we arrived at the summit of "the Soufrière" of Guadeloupe. Following the narrow path, we reached a dark chasm spanned by a narrow bridge of rock; crossing this bridge and scaling the opposite cliff, we were greeted at the top with loud blasts like those of a high-pressure steamer, and volumes of vapor were blown in our faces.

The aperture from which the steam and vapor issued is in the center of a desolate area having on its border numerous openings from which issue blasts of hot air that taint the atmosphere for many feet

around, and from which also issue rumblings, groans, and growlings, conveying to us the idea that all was not peace and quietness in the interior of Mount Soufrière.

After remaining some time at the summit and partially recovering from our fatigue, we commenced the descent, and on arriving at the hot bath, on the border of the woods, I enjoyed an hour's immersion in its tepid current, which removed all traces of weariness.

The setting sun warned us that we must be on the march again, and I bade farewell to this enchanting spot, and soon after arrived at the house of my host, feeling that we had been well paid for our hard day's labor.

COMMUNES.

The island comprises twenty-six communes and eighty districts of justices of the peace.

Guadeloupe proper embraces the communes of Basse-Terre, Saint-Claude Baillif, Vieux-Habitants, Bouillante, Pointe-Noire, Destraies Sainte-Rose, Lamentin, Baie Mahault, Petit-Bourg, Goyave, Capesterre, Trois-Rivières, Vieux-Fort, and Gourbeyre.

Grande-Terre embraces the communes of Pointe-à-Pitre, Abymes Gosier, Sainte-Anne, Saint François, Moule, Anse-Bertrand, Port Louis Petit-Canal, and Morne-à-l'Eau.

DEPENDENCIES.

Guadeloupe has five dependencies:

1. The largest is the island of Marie-Galante, with a population of sixteen thousand two hundred and fourteen, and is eighty-three kilometers in circumference; it contains three communes, viz: Grand-Bourg, Capesterre, and St. Louis. The town of Grand-Bourg is the principal town; it has a correctional tribunal, a revenue office, chamber of agriculture, a house of correction, and civil hospital. The harbor being nearly surrounded by reefs makes it difficult of entrance.

2. Is the group of islands called the Saintés, with a population of about two thousand, and is situated nineteen kilometers southeast of Guadeloupe. The most central of the group is called "Terre-de-Haut," on which is established a parish; on the western side is a good harbor suitable for the largest ship of war. Its topographical location, the sieges it has sustained, and the fortifications there erected have caused it to be styled "the Gibraltar of the Antilles." In the vicinity of Terre-de-Bas and on the Islet of Cabres is situated Fort Joséphine, which has been converted into a lazaret and a house of correction to which criminals for heinous offenses are sent from Guadeloupe and its dependencies. There they are occupied in breaking stones, which are conveyed in droghers to Guadeloupe and used for building streets and government roads. Fishing is the principal avocation of the inhabitants.

3. The island of Desirade, distant 11 kilometers from "Point-des-Châteaux," of Grande-Terre, is about 22 kilometers in circumference, and has a population of 2,000. There is here a hospital for lepers.

4. The north part of St. Martin, distant 233 kilometers from the north part of Guadeloupe, is 39 kilometers in circumference, and has a population of 3,460. The principal port of entry is Marigot. Salt ponds have been established that give to St. Martin extra advantages; for, in consequence of their establishment, vessels are not obliged to pay port charges. The southern part belongs to the Dutch Government.

5. The island of St. Barthélemy is situated 130 miles north northwest

of Guadeloupe, and is 25 kilometers in circumference, and has a population of 2,375.

St. Barthélemy was ceded by France to Sweden in 1784, and retroceded to France by a treaty dated August 10, 1877, ratified by the President of the Republic on the 12th of March, 1878, pursuant to the law of the 2d of the same month. According to that law (article 3) the island of St. Barthélemy is politically, administratively, and judicially a dependency of Guadeloupe. M. Conturier, governor of Guadeloupe, took possession of it in the name of France on the 16th day of March, 1878.

The principal town is Gustavia. Guadeloupe and its dependencies, exclusive of St. Barthélemy, are divided into ten cantons, or counties; these are subdivided into thirty-two communes, cities, or towns. These communes have a common council elected every three years by general suffrage; the number of councilmen depends upon the importance of the place.

Pointe-à-Pitre, with a population of about 23,000, comprising the floating population, is entitled to 27 councilmen. There is also a general council, composed of 24 members, but at the next session of the general council its number will be increased to 36.

Guadeloupe and its dependencies are entitled to send a senator and deputy to the councils of France; the senator is elected by the general council and a delegation of all and each of the town councils. The deputy is elected by universal suffrage.

The governor and all heads of departments are appointed by the home government.

QUALIFICATIONS FOR VOTING.

Every Frenchman having attained the age of twenty-one years and enjoying civil and political rights is eligible and has a right to vote; he must, however, reside six months in the town or city wherein the election takes place.

NOT ELIGIBLE.

Those condemned for outrage against public morals, religion, or having been condemned to more than three months' imprisonment; notaries, recorders, and ministerial officers whose commissions have been taken from them; vagabonds and mendicants; those condemned for gambling and usury; insane persons; those who have failed in business and have not been exonerated; those condemned to more than one month's imprisonment for rebellion, outrage, and violence against those holding public authority or force; for outrage against a juror on account of his functions, or against a witness on account of his testimony; for infringement of the law concerning mobs, and the law against public and private meetings, and for infringement on the law of huckster, cannot be allowed to figure on the electoral list for five years from the expiration of their terms of punishment.

Electoral lists are revised annually.

Those who have used violence against government functionaries cannot be elected as members of the general council.

PUBLIC MEETINGS.

1. Public meetings, non-politic and non-religious, can be held by complying with conditions prescribed in the following articles, viz:

2. Each meeting must be preceded by a declaration, signed by seven persons living in the city or town where it takes place and enjoying

civil and political rights; this declaration states the names, qualifications, and residence of the parties, the house, day, hour, and the purport of the meeting. A warrant of same is immediately given, which must be exhibited at every call of the agents of authority. The meeting cannot take place until the lapse of three full days after the grant of the warrant.

3. A meeting can only be held in an inclosed and covered space, and cannot exceed the time fixed by the competent authority for the closing of public places.

4. Each bureau must be composed of a president and two auxiliaries, at least, who are charged with keeping order in the assembly and preventing all encroachments on law. The members of the bureau must not tolerate the discussion of any question foreign to the object of the meeting.

5. A functionary, either of the judicial or administrative body, delegated by the administration, may assist at the sitting; he must, however, have his insignia and take a place to his choice.

6. The functionary who assists at the meeting has a right to order its closing. If the bureau, though warned, suffers matters foreign to the meeting to be discussed, and if the meeting becomes riotous, the persons there assembled are bound to withdraw as soon as requested. The delegate states the facts, and forwards them to the competent authorities.

Neither religious nor political meetings can be held without permission being granted by the governor, and then only under very strict surveillance.

LIGHT-HOUSES AND LIGHTS.

Basse-Terre light is a red fixed light, placed between the two pavilions used as the office and depot of the port, 9 meters and 50 centimeters from the beach; its height is 13 meters above the level of the sea, and it is in latitude $15^{\circ} 49' 8''$ north, longitude $64^{\circ} 4' 44''$ west from the meridian of Paris. It is visible 7 miles, and lights all that part of the western horizon between the Pointe-du-Vieux-Fort on the south and that of the Rivière-des-Peris on the north.

A lantern showing a red light is placed at the end of the government wharf. Ships coming in to anchor will keep these two lights in range, and will pass very near and to the southward of a large iron buoy, anchored in 35 fathoms of water. This buoy was anchored there on the 20th of June, 1876, for the use of the English and French mail steamers, and on which a pale green light is placed the night that steamers are expected, and is at a distance of 300 meters from the lantern on the end of the pier.

PETITE TERRE LIGHT.

Upon the Terre de Bas, one of the islets of Petite Terre, and 180 meters from its eastern point, is the light called Petite Terre, which is a fixed light and is situated to the southward of the western point of Desirade, in latitude $16^{\circ} 10' 29''$ north, and longitude $63^{\circ} 25' 16''$ west from the meridian of Paris. It is 33 meters above the level of the sea, and is visible 15 miles, and also serves as a guide for vessels passing through the channel between Dominica and Gaudeloupe.

GOSIER LIGHT

Is situated on the island of that name, is elevated 17 meters above the level of the sea, in latitude $16^{\circ} 14' 17''$ north, and longitude $63^{\circ} 48' 54''$

west from the meridian of Paris. The light is a fixed white light, lighting all the southern and western parts of the horizon, and can be distinctly seen at a distance of 7 miles, the eye being elevated 3 meters above the level of the sea.

The light on the island of Gosier is a beacon to guide vessels along the coast of St. François and Ste. Anne, and the island is the rendez-vous for the Pointe-à-Pitre pilots.

POINTE-À-PITRE LIGHT

Is situated on the island of Mouroux, at the entrance of the harbor of Pointe-à-Pitre, and is elevated 16 meters above the level of the sea, and is visible 7 miles, the eye being 3 meters above the level of the sea. The light is a fixed white light, and lighting the entire horizon.

The first buoy marking the entrance to the port of Pointe-à-Pitre bears from this light north by west by one-half west.

The entrance to the harbor of Pointe-à-Pitre is marked by large buoys, which are lighted up every night with green and red lights.

THE MOULE LIGHT

Is situated 10 meters from the signal staff of the harbor, in latitude $16^{\circ} 16' 34''$ north, longitude $63^{\circ} 48' 20''$ west from the meridian of Paris. The light is a fixed white light, elevated 14 meters above the level of the sea, and can be seen at a distance of 7 miles, the eye being 3 meters above the level of the sea. This light is a guide to the entrance of the port. Ships in the offing should get the light to bear south-southwest, and keep that bearing under short sail, so as to be ready to receive a pilot at daylight.

GRAND BOURG LIGHT

Is situated on the island of Marie Galante, 50 meters to the eastward of the pavilion of the fort, and its elevation is 14 meters above the level of the sea, in latitude $15^{\circ} 52'$ north, and longitude $63^{\circ} 39' 07''$ west from the meridian of Paris. It is a fixed white light, lighting up that portion of the horizon seen in the offing, and serves to mark the entrance to the harbor, and can be seen at the distance of 7 miles, the eye being 3 meters above the level of the sea.

Vessels coming from the east or west must get the light to bear north-east one-quarter east, and keep this bearing at one mile from the shore to be ready to take a pilot at daylight.

POPULATION.

Population of Guadeloupe, including Grande Terre.....	157,904
Marie Galante	16,214
Saintes	2,000
Désirade	2,000
Saint Martin.....	3,463
Saint Bartholomew	2,375
Total	183,956

Divided as follows:

The whites number about	15,000
Coolie emigrants	27,000
Military force	915
Colored and blacks.....	141,041
	183,956

BIRTHS AND DEATHS.

Total number of births.....	4,243
Total number of deaths.....	4,965

AREA.

The area of Guadeloupe and its dependencies, exclusive of St. Bartholomew, is 184,851 hectares, divided as follows:

	Hectares.
Guadeloupe proper	94,631
Grande Terre	65,631
Marie Galante	14,927
Desirade	2,720
Saintes	1,422
Petite Terre	343
Saint Martin, French part	5,177
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Under cultivation :	
In sugar-cane, 560 plantations	23,152
In coffee, 926 plantations	3,965
In cotton, 524 plantations	472
In cocon, 91 plantations	458
In cloves, vanilla, and other spices	1
In provisions and farina, 5,782 plantations	10,597
In tobacco, 5 plantations	18
In annatto, 31 plantations	385
In grass fields, 54 plantations	20
Total	39,088
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Pasture land inclosed	800
Savannahs	11,675
Grown up in bushes and forest	79,423
Mountains and worthless land	53,865
Number of laborers employed in cultivation	82,801

Approximate amount of capital employed in cultivation, 112,402,110 francs.

Products.

Description.	Exportation.	Consumption.	Total.
Muscovado sugar	10,068,050		
Uaine sugar	35,555,086		
Concrete sugar	1,111,530	8,184,000	55,818,666
Molasses	582,432	3,232,432	3,815,008
Rum	2,067,137	1,884,195	4,551,332
Coffee	292,794	323,560	616,354
Cotton	1,337	20,833	22,170
Cocoa	155,598	51,325	206,923
Cloves and other spices	856	65	901
Vanilla	2,656	7,469	10,125
Tobacco		6,700	6,700
Annatto		130,900	588,530
Cassia	457,650		340
Salt		12,450	12,450
Farina		8,634,526	8,634,526
Bananas and yams			
Potatoes and other vegetables		5,242,488	5,242,488
Logwood	1,462,530		1,462,530
Furage		15,000	15,000
Pottery		20,000	20,000

ANIMALS.

Horses	5,988
Mules	5,127
Asses	2,492
Cattle	9,615

Sheep	13, 690
Goats	14, 709
Swine	14, 116

MANUFACTORIES.

There are nineteen usines or manufactories of white sugar direct from the cane, by the centrifugal process, with an aggregate capital of 23,550,000 francs. They manufacture about 430,000,000 kilograms of cane into sugar of three grades, the first and second of which are very white, and are nearly all shipped to France; nearly all of the third grade for the past year has been exported to the United States.

The average yield of cane is about 9 per cent. of sugar. Therefore they manufacture about 38,700,000 kilograms of sugar or 95,000 to 98,000 hogsheads.

The mode of proceeding with the planters is this: They receive all the cane and manufacture it into sugar, guaranteeing to give the planters 6 per cent. of the weight of cane, delivered in manufactured sugar; that is, for every 100 kilograms of cane they give to the planter 6 kilograms of sugar. The agent or manager of the usine usually ships the sugar, and the price to be paid to the planter is governed by the average monthly rate established and reported by the chamber of commerce. Fifteen days after the publishing of this report they are entitled to payment for their portion of sugar.

The planters at the time of the building of the usines entered into a contract to furnish them with cane for a period of twenty years. With most of the usines ten years of the time contracted for has expired, and it will be difficult for the usines to renew this contract at its expiration, if the demand for muscovado sugar in the United States increases as it has for the past four or five years, as the planters can realize much more from their cane when manufactured into muscovado sugar than they do now, and they regret very much having entered into that contract.

There is also a usine for the manufacturing of concrete sugar, with a capital of 100,000 francs. They manufacture annually about 14,000,000 kilograms of cane into sugar, from which they realize about 1,230,000 kilograms of sugar, nearly all of which last year was shipped to the United States.

There is a manufactory for canning and preserving pine-apples and other fruit. They put up 452,000 kilograms of pine-apples, which are all shipped to France.

RUM DISTILLERIES.

There are 120 rum distilleries that manufacture 4,551,332 liters of rum per annum, 2,667,137 liters of which are shipped to France, and the balance, 1,884,195 liters, is consumed on the islands, besides 2,345,420 liters of wines and other liquors imported mostly from France.

MINES.

There are no mines opened, although sulphur abounds in some parts of the island.

FISHERIES.

Fishing is not carried on to any extent, only enough being taken for home consumption. A profitable business could be made of it, however.

PRODUCTS OF THE FOREST.

There are about 1,500,000 kilograms of logwood produced on the island annually, all of which is shipped to France. There are also some fine woods suitable for cabinet purposes.

BANKS.

The "*Banque de la Guadeloupe*" was established at Pointe-à-Pitre July 11, 1851, with a capital of 3,000,000 francs. Rate of interest at present time is 6 per cent. per annum. This bank issues bills on Paris for 30, 60, and 90 days; the exchange, including stamps for a 90-day bill, is 1½ per cent.

Credit Foncier Colonial.—This society was established at Pointe-à-Pitre in 1863, with a capital of 12,000,000 francs, divided into 24,000 shares of 500 francs each. Their system of loaning money is for a term of thirty years or less, with interest at 10 per cent. per annum, and secured by mortgage on real estate. Parties wishing to borrow money for thirty years can do so by securing the same on real estate and paying the above rate of interest annually on the principal. If they fail to pay the interest when due, the mortgage is foreclosed and the estate sold; but if they meet their yearly payments for the period of thirty years, the principal becomes theirs, and the estate is clear of Credit Foncier.

The colonial government assumes the losses sustained by the Credit Foncier yearly, not exceeding the amount of 250,000 francs. This information I received from a member of the general council, and also from several of those who had suffered severely in consequence of borrowing money of this society. Those connected with the Credit Foncier were very reticent about giving me the desired information; consequently I was obliged to seek for it elsewhere.

IMMIGRATION.

The government has made arrangement with the English Government for the immigration of coolies from the East Indies to this island. There are now about 27,000 coolies on the island, who are mostly brought in English ships. The contract made with the cooly is generally for five years, and the planter has to pay the expenses incurred in transporting the cooly from the East Indies to Guadeloupe, which amount to from 250 to 300 francs. He also pays them from 10 to 15 francs per month, together with food, clothing, and medical attendance. The clothing consists of two coarse suits per year, and the food is mostly rice and salt fish. At the expiration of five years they can return to their own country at the expense of the government, or if they choose to remain and recontract for another five years the cost of return passage will be paid to them.

The introduction of the coolies into this island is regarded as beneficial to the planters, as it has a tendency to keep down the price of labor.

FOOD-PRICES.

Fresh beef sells in the market for one franc per pound and no discount for bone, as the whole carcass of the creature is cut up, bone and all, and

sold at that price. Nearly all of the beef cattle are imported from Porto Rico.

	Francs.
Mutton.....per pound..	1.00
Chickens.....do.....	2.00
Eggs.....per dozen..	1.50
Fresh fish.....per pound..	.70
Salt fish.....do.....	.50
Potatoes.....do.....	.25

Bread.—There is no bread baked in the families, but in bakeries, and the weight and price is regulated by the administration, according to the price of flour. With the wholesale price of flour at 40 francs per barrel, bread is worth 20 centimes per 238 grams. There is a penalty for selling short weights—confiscation of bread, and fine. Vegetables and fruit are plentiful and cheap.

WAGES.

The price of labor on the estates, for able-bodied men, is about 2 francs per day. In the usines, from 2 to 6 francs, according to the different kinds of work done. Stevedores receive 5 francs per day, and clerks from 100 to 400 francs per month.

CLIMATE.

In the cities and low lands it is very hot and sultry, and generally unhealthy, but in the mountain districts of Guadeloupe proper the climate is delightful at all seasons of the year, and is very healthy, averaging from 65° to 80° Fahr.

COINAGE.

The coinage is the same as used in France, viz, napoleon, ten and five franc pieces (gold), five francs, two francs, one franc, fifty centimes and twenty centimes (silver), ten centimes and five centimes (copper), and bank bills of the denominations of five hundred, one hundred, twenty-five and five francs. All foreign moneys are bought and sold as merchandise.

SUBSIDIES.

The colonial government pays the following subsidies, viz :

To the steamer plying between Pointe-à-Pitre and Basse-Terre, 90,000 francs.

For small steamboat plying between Pointe-à-Pitre and Petite-Bourg, 6,000 francs.

For diligence running between Petite-Bourg and Basse-Terre, 22,600 francs; from Pointe-à-Pitre to St. François, 2,000 francs; from Pointe-à-Pitre to Ste. Rose, 6,000 francs; and from Pointe-à-Pitre to the Moule, 3,000 francs.

To the West India and Panama Telegraph Company, 51,546 francs.

To the ice company, for furnishing Pointe-à-Pitre and Basse-Terre with ice, 3,000 francs. Theater at Pointe-à-Piter, 6,000 francs; various other small stage and boat lines, 30,392 francs.

Total subsidies, 220,528 francs.

REVENUE.

Revenue derived from customs, including duties on imports, exports, and port charges on vessels, is 2,182,114 francs, and from all other sources, 2,756,815 francs. Total amount, 4,938,929 francs.

DISBURSEMENTS.

The amount of disbursements is 4,937,489.72 francs.

PORT CHARGES.

PILOTAGE.

	Francs.
Vessels of 15 to 30 tons	10.00
Vessels of 30 to 60 tons	30.00
Vessels of 60 to 80 tons	60.00
Vessels of 80 to 100 tons	78.75
Vessels of 100 to 150 tons	118.12
Vessels of 150 to 200 tons	144.37
Vessels of 200 to 250 tons	170.62
Vessels of 250 to 300 tons	196.87
Vessels of 300 to 350 tons	223.12
Vessels of 350 and above	249.37
with 20 per cent. additional.	

Vessels under 80 tons are not obliged to take a pilot.

LIGHT DUES.

Per ton, 40 centimes, with 20 per cent. additional.

DROGHERS.

Per ton, 10 centimes, with 20 per cent. additional.

BUOY TAX.

Per ton, 40 centimes, with 20 per cent. additional.

	Francs.
Passport and stamp for vessels	7.20
Permit	6.00
Water tax, per ton .....	.30

INTERPRETER FEES.

Vessels of 60 tons and under	5.00
Vessels of 61 to 100 tons	30.00
Vessels of 101 to 150 tons	35.00
Vessels of 151 to 200 tons	45.00
Vessels of 201 to 250 tons	60.00
Vessels of 251 to 300 tons	80.00
Vessels of 301 to 350 tons	105.00
Vessels of 351 tons and above	135.00

SANITARY VISITS.

Vessels of 100 tons or less	7.20
Vessels of 101 to 150 tons	10.80
Vessels of 151 to 200 tons	14.40
Vessels of 201 tons and above	18.00

TONNAGE DUES.

Vessels with cargo, per ton	2.00
Vessels in ballast, per ton .....	.50

Vessels with one-half cargo of fish are exempt from tonnage dues.
 Vessels coming to try the market are exempt from any port charges.
 Vessels having paid their port charges in one of the ports of the island

can proceed to any other port in the colony to discharge or load without any extra charges.

WHARFAGE ON VESSELS.

	France.
Vessels of 50 tons or less.....	10. 40
Vessels of 50 tons to 150 tons.....	25. 00
Vessels of 150 to 300 tons.....	40. 00
Vessels of 300 tons and above.....	50. 00

WHARFAGE ON MERCHANDISE.

Packages of 100 kilograms or less.....	.06
Packages of 100 to 200 kilograms.....	.12
Packages of 201 to 300 kilograms.....	.18
Packages of 301 to 400 kilograms.....	.24
Packages of 401 to 600 kilograms.....	.30
Packages of 601 to 1,000 kilograms.....	.48
Packages of 1,000 kilograms and above.....	.60
Sugar, per hogshead.....	.60
Horses and mules, per head.....	.60
Cattle.....	.30
Cattle (young).....	.12
Sheep and goats.....	.06
Wines and liquors in packages of less than 900 liters.....	1. 20
Coal, per ton.....	.24
All other merchandise not included in cases, per ton.....	.48
Lumber, white pine, per thousand.....	.96
Shingles, per thousand.....	.12
Staves, per thousand.....	1. 20

DUTIES ON IMPORTS.

Apples exempt.	
Asses, per head.....	3. 00
Beef, per barrel of 90 kilograms.....	8. 50
Butter, in firkin of 20 kilograms.....	3. 50
Butter, in other packages of 100 kilograms.....	18. 60
Biscuit, per 100 kilograms.....	4. 50
Beer, per hectoliter.....	7. 00
Beans, per hectoliter.....	2. 00
Brick, per thousand.....	2. 00
Bran, exempt.	
Cattle, per head.....	10. 00
Champagne, per hectoliter.....	57. 00
Cutlery, ad valorem, 10 per cent.	
Cordage, per 100 kilograms.....	7. 00
Cheese, per 100 kilograms.....	18. 00
Casks (empty), ad valorem, 4 per cent.	
Corn, per hectoliter.....	1. 00
Copper, per 100 kilograms.....	16. 00
Cloth for bags, ad valorem, 3 per cent.	
Cotton goods, ad valorem, 8 per cent.	
Clothing for laborers, ad valorem, 6 per cent.	
Clothing, ad valorem, 12 per cent.	
Carriages, ad valorem, 15 per cent.	
Carriage materials, ad valorem, 15 per cent.	
Calves, per head.....	3. 00
Coal and coke, per ton.....	1. 00
Drugs, ad valorem, 10 per cent.	
Fish in oil, per 100 kilograms.....	18. 00
Fish, salted or smoked, per 100 kilograms.....	3. 00
Fish, cod (dry), per 100 kilograms.....	2. 00
Fruit and vegetables, exempt.	
Fire-arms, ad valorem, 15 per cent.	
Flour, per barrel.....	5. 00
Furniture, ad valorem, 10 per cent.	
Fancy goods, ad valorem, 12 per cent.	
Fruit (dried), per 100 kilograms.....	16. 00
Gunpowder, ad valorem, 15 per cent.	
Glassware, ad valorem, 10 per cent.	
Guano, ad valorem, 1 per cent.	
Hats, first quality, ad valorem, 10 per cent.	

	Francia.
Hats, second quality, ad valorem, 8 per cent.	
Haberdashery, ad valorem, 10 per cent.	
Horses, per head	30.00
Hams and smoked meats, per 100 kilograms	20.00
Hard wood, for agricultural purposes, per thousand feet	2.00
Hoops, per thousand	2.00
Hides, each .....	.50
Ice, exempt.	
Iron in bars, per 100 kilograms	1.00
Iron, galvanized, per 100 kilograms	2.00
Iron, plated, per 100 kilograms	5.00
Jewelry, gold and silver, ad valorem, 6 per cent.	
Jute for bags, ad valorem, 2 per cent.	
Lumber, white pine, per thousand feet	2.00
Lumber, pitch pine, per thousand	3.00
Lumber of other kinds, ad valorem, 5 per cent.	
Lead, per 100 kilograms	5.00
Leather, ad valorem, 10 per cent.	
Lard, per 100 kilograms	14.00
Liquors (distilled), per hectoliter	24.00
Matches, per gross	2.00
Mules, per head	10.00
Meal, corn, per hectoliter	2.00
Machinery and mechanical tools, ad valorem, 3 per cent.	
Nails, per 100 kilograms	3.00
Oats, per hectoliter	1.00
Oil (olive), cases, 12 bottles	2.40
Oil (olive), baskets, 12 bottles	1.20
Oil (olive), casks, per 100 kilograms	13.50
Oil for machinery, per 100 kilograms	6.00
Oil from seeds, per 100 kilograms	6.00
Oil, kerosene, per 100 hectoliters	20.00
Pickles, per 100 kilograms	9.00
Pease, per hectoliter	2.00
Perfumery, ad valorem, 15 per cent.	
Pastry, per 100 kilograms	7.00
Porcelain, ad valorem, 10 per cent.	
Potatoes, per 100 kilograms	1.50
Poultry (exempt).	
Pork, per 100 kilograms	10.00
Preserves in sirup or spirit, per box of 9 kilograms	2.00
Rice, per 100 kilograms	1.50
Rosin, per 100 kilograms	1.00
Shingles, per thousand	2.00
Staves, per thousand	4.00
Shooks, each hoghead .....	.30
Slate, per thousand	3.00
Stones (grind), per 100 kilograms	3.50
Silk goods, ad valorem, 10 per cent.	
Saddlery, ad valorem, 10 per cent.	
Shoes, ad valorem, 10 per cent.	
Soap, per 100 kilograms	5.00
Sirups, ad valorem, 15 per cent.	
Sugar (refined), per 100 kilograms	10.00
Sausages, ad valorem, 30 per cent.	
Sheep, per head	1.00
Salt, per 100 kilograms	1.00
Swine, per head	2.00
Tallow candles, per box of 25 pounds	1.30
Tar, per 100 kilograms	1.00
Turpentine, per 100 kilograms	1.00
Twine, per 100 kilograms	10.00
Tiles, per thousand	10.00
Tobacco, leaf, per 100 kilograms	95.00
Tobacco (manufactured), per 100 kilograms	230.00
Vinegar, per hectoliter	3.00
Vessels, per ton	2.00
Vegetables, salted or preserved, per 100 kilograms	9.00
Vegetables (green), per 100 kilograms	1.00

	Francs.
Wine (Bordeaux), per hectoliter	6. 00
Wine (de Côte), per hectoliter	4. 50
Wine, in case or double-headed corks	20. 50
Wine, Vermouth, per hectoliter	18. 00
Wine, Madeira and Tenneriffe	37. 50
Wine of other kinds	30. 00
Woolen goods, ad valorem, 10 per cent.	
Zinc (paint), per 100 kilograms	6. 00
Zinc, per 100 kilograms	5. 00

DUTIES ON EXPORTS.

Annetto, per 100 kilograms	1. 25
Coffee, per 100 kilograms	5. 00
Cocoa, per 100 kilograms	2. 00
Molasses, per hectoliter	1. 00
Rum, per hectoliter	2. 00
Sugar, average per 100 kilograms	2. 55
Vanilla, exempt.	

Twenty per cent. added to above.

Steamers carrying on a regular trade will be subject to tonnage dues, sanitary visits, pilotage and buoy tax, in proportion to the number of tons of cargo they land in the colony.

In case the number of tons landed is 15 or less, the pilotage dues remain invariably fixed at 10 francs. If they land no merchandise they will pay tonnage dues only, at the rate of 20 centimes per registered ton.

BONDED WAREHOUSE DUES.

On all merchandise, not including putting in and out of storehouse, 3 per cent. ad valorem per year.

Charges for labor.

Character of labor.	Putting in.	Putting out.
	Francs.	Francs.
Tobacco, per hogshead	1. 50	1. 20
Tobacco, per barrel or bale .....	. 18	. 12
Corn-meal, per barrel .....	. 18	. 12
Corn, rice, beans, and pease, per hectoliter .....	. 18	. 12
Flour, per barrel .....	. 18	. 12
Butter, in boxes, less than 10 kilograms .....	. 03	. 03
Butter, in boxes, more than 10 kilograms .....	. 06	. 06
Biscuits, per barrel .....	. 18	. 12
Cordage, per coil .....	. 48	. 36
Pipes .....	. 60	. 45
Hogsheads .....	. 48	. 36
Casks .....	. 30	. 24
Tierces .....	. 24	. 18
Cases .....	. 06	. 03
Hoops, per thousand	2. 40	1. 80
Packages, from 100 to 300 kilograms .....	. 36	. 36
Packages, less than 100 kilograms .....	. 24	. 24
Packages, above 300 kilograms .....	. 48	. 48

LICENSES FOR DOING BUSINESS.

Extra class from 1,000 to 3,000 francs.

First class	1, 000
Second class	850
Third class	750
Fourth class	600
Fifth class	500
Sixth class	450

Seventh class	400
Eighth class	350
Ninth class	300
Tenth class	250
From tenth to twenty-first class the fees for license are from 10 to 250 francs.	
Notaries	300
Lawyers	200
Physicians	200

STAMPED PAPER.

All notes of hand, in order to make them negotiable, must be written upon stamped paper; and stamped paper must be used for documents of all kinds to have them legal; also, all receipts for money to the amount of 10 francs or more must be written on that kind of paper.

CHARLES BARTLETT,
Consul.

UNITED STATES CONSULATE,
Guadeloupe, October, 1880.

TRADE BETWEEN CAPE HAYTIEN AND THE UNITED STATES.

REPORT BY CONSUL GOUTIER.

My report for quarter ending September 30, 1880, embraces the following inclosures: Description and value of the exports from the United States to this port; and quarterly statements of the navigation and commerce between the United States and Cape Haytien, for eight years ending September 30, 1880.

Twenty-seven vessels of 12,474.90 tons, with cargoes amounting to \$176,895.28, arrived from the United States during the above-named quarter; while the exports amounted to \$152,470.70.

Four hundred and fifty-three vessels, with cargoes consisting of provisions, lumber, and manufactured articles amounting to \$4,956,935.87, arrived from the United States during 8 years; 75 other vessels arrived in ballast and took cargoes for the United States, making a total of 528 vessels arrived. Of this number, 406, or 77 per cent., were American, and 22, or 23 per cent., were foreign. The importations in American vessels amounted to \$3,901,629.62, and in foreign vessels \$1,055,306.25. The exportations from this port to the United States during the eight years amounted to \$1,591,712.02. Of this amount, \$1,160,477.10 was carried in American, and \$431,234.92 in foreign vessels. It will be seen that 404 vessels arrived with general cargoes. Of this number, 59.75 per cent. arrived from New York, 40 per cent. from Boston, and only one vessel, or 0.25 per cent., from Philadelphia.

At one time nearly all the provisions shipped here came from Boston. But New York has succeeded in obtaining at last the greater part of this trade. During the past three years 122 vessels with assorted cargoes arrived from New York, while only 55 arrived from Boston.

Trade between the United States and this port is in a good condition. We furnish all the provisions and lumber used here. What is said of Cape Haytien can be applied nearly to the whole of Hayti.

HOW TO ENLARGE AMERICAN TRADE.

Three years ago when the price of raw material as well as that of manufactured articles was so low, when the prevailing stagnation of

business, the depression of prices, and an overstocked market, allowed the United States to compete with England, France, and Germany, and in many instances undersell them, considerable cotton goods were imported here. If the low prices had continued we would, in a few years, have had the monopoly of the dry goods as well as the provision trade of this country. But prices advanced and we can no longer compete with the principal manufacturing nations of Europe on account of the unrequited labor of their operatives. It is not to be expected that our intelligent, educated, superior, and well-remunerated artisans can be reduced to the level of their European brothers. It is only by the superiority of our fabrics that we can expect to maintain a foothold in spite of the low prices of British goods. But something further remains to be done. Let competent persons be sent out to see what kind of goods suits this market, and the method of packing these goods; likewise, if other patterns could not be introduced. They would be able to judge whether the white cotton goods sent from the United States are not too fine, consequently too expensive; whether something between that and the common sort, heavily sized to hide its inferiority, which is received from Europe, could not be advantageously introduced into this country.

Let merchants and manufacturers send only such goods as have been ordered, and not attempt to rid themselves of their unsalable merchandise. A merchant of this city after having been advised that he could be furnished with certain goods as per sample sent, ordered ten bales. Upon arrival he found that the merchandise was not at all like the sample. This merchant had been in the habit of sending to Europe for his goods, and expressed regret that he had not done so in this instance instead of sending to the United States.

The legislature has enacted a law "that all foreign-built vessels under the Haytian flag shall pay the same port charges as foreign vessels." This is perfectly right; for, as I stated in my No. 361, of June 24, 1879, "the Haytian only lends his name for the ownership of these vessels, while the *bona-fide* owners are foreigners."

An additional duty of 50 per cent. per 1,000 pounds is to be levied on logwood from and after December 15th proximo. The present duty on this staple is \$1.20 per 1,000 pounds, which with the additional duty will raise it to \$1.80 per 1,000 pounds.

Coffee comes in slowly because the country people find the price paid them, 7 cents per pound, too low.

STANISLAS GOUTIER,
Consul.

UNITED STATES CONSULATE,
Cape Haytien, November 12, 1880.

Statement showing the description, quantity, and value of the imports into Cape Haytien from the United States for the quarter ending September 30, 1880.

Alwives, 355 barrels and 105 half barrels; axes, 74 dozen; salt beef, 4 barrels and 7 quarter barrels; biscuits, 5,303 pounds; beer, 87 dozen; boards, 132,544 feet; beans, 27 barrels; butter, 22,420 pounds; corn, 10 barrels; corn-meal, 39 barrels; cheese, 10,500 pounds; tallow candles, 1,390 pounds; cart, 1; cotton goods, 42,110 yards; cod-fish, 454,980 pounds; chairs, 46 dozen; rocking-chairs, 4 dozen; cement, 15 barrels; denim, 16,250 yards; blue drilling, 23,250 yards; doors, 27 pairs; drugs and medicines, 40 cases; duck, 2,057 yards; fire-engine, 1; flour, 4,571 barrels, 2,011 half barrels, and 677 quarter barrels; furniture, 16 sets; drinking-glasses, 113 dozen; hams, 6,254 pounds; hats, 5 dozen; smoked herrings, 5,130 boxes; hay, 59 bales; handkerchiefs, 20 dozen; iron railings, 2; iron in bars, 4,636 pounds; iron axle-trees, 4; field knives, 4 dozen; lard, 36,670 pounds; mackerel, 402 barrels and 115 half barrels; matches,

260 gross; preserved meats, 33 dozen; nails, 171 kegs; oats, 75 barrels; oakum, 6 bales; oars, 6 dozen; onions, 3 barrels; kerosene oil, 16,350 gallons; linseed oil, 270 gallons; pails, 65 dozen; paint, 268 kegs; black pepper, 180 pounds; pitch, 5 barrels; potatoes, 23 barrels; pork, 2,655 barrels, 495 half barrels, and 5 quarter barrels; raisins, 112 quarter boxes; rosin, 6 barrels; rice, 251,596 pounds; shoes, 46 dozen; India-rubber shoes, 6 dozen; soap, 15,901 boxes; salmon, 1 barrel; large scales, 2; sewing-machines, 20; shingles, 30,000; slates, 17,000; white sugar, 27,950 pounds; stockings, 10 dozen; turpentine, 60 gallons; tobacco, 3,140 pounds; trunks, 207 nests; tar, 11 barrels; tongues, 21 barrels; tubs, 26 nests; wheels, 6 pairs; wheelbarrows, 6; and Florida water, 122 dozen; the whole amounting to \$176,895.28 gold.

Quarterly statements of navigation and commerce between the United States and Cape Haytien for eight years ending September 30, 1880.

Quarters ending—	IMPORTS.			EXPORTS.		
	Value of cargoes in American vessels.	Value of cargoes in foreign vessels.	Total value of cargoes.	Value of cargoes in American vessels.	Value of cargoes in foreign vessels.	Total value of cargoes.
1872.						
December 31	\$102,936 27	\$41,562 36	\$144,498 63	\$8,517 92	\$5,133 86	\$13,651 78
1873.						
March 31	95,642 09	9,062 95	104,705 04	11,821 12	4,806 28	16,627 40
June 30	74,218 80	74,592 37	148,811 17	3,637 25	6,390 48	10,033 73
September 30	83,078 77	23,606 25	106,685 02	4,900 44	4,275 04	9,175 48
December 31	165,312 47	46,120 69	211,433 56	25,718 08	6,605 11	32,323 19
1874.						
March 31	150,068 74	45,725 37	204,794 11	77,468 41	7,563 93	15,062 34
June 30	120,376 57	-----	120,376 57	12,016 01	-----	17,016 01
September 30	102,302 32	5,721 07	108,023 39	14,990 35	1,804 12	16,794 47
December 31	142,254 46	6,694 16	148,948 62	29,171 67	5,717 64	34,889 31
1875.						
March 31	173,802 70	9,401 47	182,704 17	20,391 39	5,910 36	26,301 75
June 30	179,616 93	2,316 62	181,933 55	23,347 85	3,831 28	27,179 13
September 30	106,993 26	27,918 64	134,911 90	26,155 70	3,814 35	29,970 05
December 31	253,886 74	13,453 70	267,340 50	19,306 68	6,032 81	25,339 49
1876.						
March 31	132,392 15	3,231 18	135,623 33	2,898 08	-----	2,898 08
June 30	136,271 94	-----	136,271 94	7,440 87	-----	7,440 87
September 30	130,016 18	12,049 24	142,065 42	20,925 67	2,588 55	23,514 22
December 31	161,570 40	7,025 12	168,595 52	33,312 90	4,890 65	37,703 55
1877.						
March 31	76,256 39	15,087 34	91,343 73	10,541 48	3,170 31	13,711 79
June 30	99,734 73	-----	99,734 73	10,926 80	7,695 08	18,621 88
September 30	92,939 44	25,142 73	118,082 17	23,101 68	-----	23,101 68
December 31	192,197 94	43,183 79	235,381 73	24,440 33	3,425 81	27,866 14
1878.						
March 31	105,836 38	50,260 75	156,106 13	31,129 23	6,104 09	37,233 92
June 30	92,301 48	13,588 75	105,890 23	43,673 34	-----	54,829 53
September 30	57,982 89	39,739 11	97,721 50	37,096 64	10,250 12	47,346 76
December 31	129,744 98	47,758 82	177,503 80	40,500 05	9,656 46	50,157 41
1879.						
March 31	78,586 02	26,986 71	105,572 73	30,244 34	17,092 50	47,336 84
June 30	85,201 59	50,995 72	145,287 31	43,148 70	24,583 80	67,732 50
September 30	72,440 28	57,096 54	129,536 82	38,539 80	25,562 10	64,101 90
December 31	131,204 95	102,963 16	234,168 11	171,695 47	60,275 67	231,971 14
1880.						
March 31	141,513 66	101,414 30	242,927 96	180,113 69	98,376 13	278,489 82
June 30	130,655 76	62,405 14	193,060 90	106,896 59	23,922 57	130,819 16
September 30	93,701 84	81,193 44	176,895 28	91,377 67	61,093 03	152,470 70
Total	3,901,629 62	1,055,306 25	4,956,935 87	1,160,477 10	431,234 92	1,591,712 02

RECAPITULATION.

Where from.	Number of vessels.	Cargoes.	Value.
New York.....	241	Provisions, lumber, manufactured articles, &c.	
Boston.....	163		
Philadelphia.....	1		
Mobile.....	19		
Wilmington, N. C.....	18		
Jacksonville.....	7	Lumber.....	
Bangor.....	1		
Rockland.....	1		
Santilla.....	1		
Pascagoula.....	1		
Savannah.....	1		
Sundry ports in the West Indies..	453	With cargoes amounting to.....	\$4, 956, 935 87
	75	In ballast and cleared with cargoes for the United States.	
Total.....	528		

TRADE OF JAMAICA WITH THE UNITED STATES.

REPORT OF CONSULAR-AGENT NUNES, OF FALMOUTH.

PRODUCTS OF JAMAICA.

The Department circular of July 1, 1880, has duly come to hand, and I have the honor, while conforming to the desire expressed therein that I should furnish a report relative to my district "upon all subjects which may be calculated to advance the commercial and industrial interests of the United States," at the same time to assure you that I at once recognize the necessity and advantages of such information being rendered, and for the acquiring and communication of same I have most readily and cordially devoted my best efforts.

I would respectfully premise that my district (the parish of Trelawny) has heretofore unfortunately been resorted to in a very limited way for exports to the United States of our ordinary productions. There are no general manufactories on this island to afford the means of supporting an export trade of any importance in addition to its present chief and leading staples of sugar and rum and dye-woods. The district has ever been solely dependent upon its agricultural resources for maintaining an export trade, which has, from a variety of causes, been suffering depression for many years, and which has now dwindled down to very small figures in comparison to what they were half a century ago. The products hitherto exported from this district consist of sugar, rum, pimento, coffee, logwood, fustic, bitterwood, lignum-vitæ, honey, wax, lime-juice, and cocoanuts, the chief portion of which goes to Europe. A very small quantity of sugar and rum is shipped to the United States. For sugar, the preference appears to be given to the production of Cuba and of the West India Islands. There is no rum in the world of equally good flavor and as valuable as that of this island, which, in past years, was exported to New York, Philadelphia, and other important commercial cities of America in large and frequent shipments.

It is no doubt known to you that the article of pimento (of which very extensive quantities were formerly shipped to the United States) is entirely confined to Jamaica, and is not exported from any other country. The entire annual crop of the island is generally estimated about 60,000 bags (the weight of a bag being 130 to 160 pounds). The result of the gathering in of this spice is, however, exceedingly uncer-

tain and critical—the berries while on the trees being often suddenly and extensively affected, even during a single night, by strong wind or heavy weather.

As a proof of how susceptible the berries are while in a tender stage to the influence of weather, I may state that owing to the storm which visited Jamaica in the month of August last the present year's crop of the whole island will not amount to 6,000 bags. Our other products of lesser importance have been more favored by finding an encouraging market in the United States. From this remark I must except the article of fruit, which, as yet, we have not had a fair opportunity of exporting on a favorable basis. This parish abounds in the description of fruit which would comprise a mutually desirable and lucrative traffic between this port and the United States; but almost every attempt at a profitable investment (here) has hitherto failed in consequence of the want of speedy carriage—or, I may say, owing to the absence of direct steam communication.

STEAM COMMUNICATION.

The transmission by ordinary sailing vessels renders the result of the undertaking almost certain of loss, attributable to the depreciation of the fruit by the length of the voyage. I am, however, glad to be able to report that the enterprising company of the Atlas Line of steamers are about making arrangements for direct communication by their steamers between this port and New York. Not only will this enterprise open up an additional important branch of trade and be the means of affording a profitable business to many, as well as encouraging the peasantry of this district in the cultivation of fruit, which heretofore has been almost valueless to them, but direct steam communication between New York and Falmouth will be the certainty of enabling many traders of small means to avail themselves of the advantage of importing, from which they are at present excluded in consequence of inability to secure carrying space; and so as to render myself fully explicit, I may mention that sailing vessels from the United States to this island seldom afford the privilege of shipments of cargo to be made thereby except on account solely of the charterer or of the consignee.

This advantage, so far as importations are concerned, may not immediately increase the exports from the United States to this island, but it will be the means of affording opportunity for direct importations for our local consumption instead of compelling resort, as has hitherto been frequently the case, to other places in the island for American articles of food to meet the call for consumption in this district.

IMPORTS FROM THE UNITED STATES.

This district, and, indeed, I may say the entire island, is dependent upon the United States for the supply of our principal articles of food. We procure solely from the United States all that is consumed of flour, corn-meal, biscuit, bread, salted pork and beef, lard, and kerosene oil. Of the above, the peasantry are the chief consumers of corn-meal, salted pork, and lard.

When it is remembered that the population of Jamaica exceeds half a million, of which there are about 41,000 in this parish, I conceive that with the promise of a new and profitable business in the fruit trade, now at once to be availed of, there are reasonable grounds for expecting improvement in our importations of food for the peasantry, as it must be assumed that the bettering of their pecuniary condition will

enable them to indulge more extensively in what at present is more expensive than the articles of substitution which they are compelled to resort to.

I must not omit reference to the gradually increasing importation of manufactures of cloth goods and iron-ware, pumps, and other machinery from the United States, which in almost all instances excel and surpass the quality of what we had previously been accustomed to procure from the European market, and there is no doubt that a steadily growing business in that respect has now been fairly established and rendered secure and reliable.

In conclusion, I beg most respectfully to acknowledge, with thanks, the very gratifying and flattering terms in which you have so courteously referred to the officials of the consular department to which I have had the honor of being attached for upwards of a quarter of a century.

ROBERT NUNES,
Consular Agent.

UNITED STATES CONSULAR AGENCY,
Falmouth, Jamaica, October 22, 1880.

TRADE OF MONTEGO BAY, JAMAICA, WITH THE UNITED STATES.

REPORT BY MR. CORINALDI, CONSULAR AGENT.

I have the honor to acknowledge circular dispatch of July 1, 1880, highly complimentary to the consular service, and calling for reports on subjects calculated to advance the commercial and industrial interests of the United States.

In obedience, I now beg leave to present my report, but which, from the limited operations of this consular agency, will, I fear, prove disappointing.

The traffic of the United States with this district is chiefly in bread-stuffs from the States and fruit from this country, and I am sorry to say the conveyance both ways is now almost if not entirely in British shipping. The enterprise of one mercantile house here has mainly monopolized the business by steam power. I should say that competition by a company in the States, if not by individuals, might remedy this. The produce of this district is purely agricultural and consists of rum, sugar, coffee, pimento, ginger, dye-woods, and fruit.

The fruit is grown by the native peasantry, a colored population, in excess of the white or European as 40 to 1. They can produce an unlimited supply of fruit, which seems to obtain a ready market in the United States.

I do not think that the imports from the United States could be extended with a due regard to profit, with the exception of salted fish. This article is the chief food of the peasantry and is always wanted. Of American manufactures in cotton and other goods, printed cottons and piqués have been introduced by the firm of which I am a member, and outrival the goods of the same class of British manufacture in durability and cheapness. It is very probable that a good trade might be opened up in domestics and calicoes; but I must again say that the field is limited. The population of this district is under 30,000, but its central position makes it available to as many more.

If I were to confine my report to one subject, the fruit trade is all that I could specially recommend.

S. G. CORINALDI, *Agent.*

UNITED STATES CONSULAR AGENCY,
Montego Bay, Jamaica, October 9, 1880.

TRADE OF SAN DOMINGO WITH THE UNITED STATES.

REPORT BY CONSUL JONES, OF SAN DOMINGO.

In addition to my quarterly reports of the trade and commerce of this port, which have been regularly forwarded, I have prepared a comparative statement of the principal articles of export and import between this port and the United States for the years ending June 30, 1879, and 1880, which I have the honor to transmit herewith.

It will be observed that the trade with the United States is gradually increasing, the imports of provisions showing a large increase, as does also the item of machinery, the latter comprising, almost wholly, machinery connected with the manufacture of sugar.

In the item of dry goods there is a large falling off. This, however, I attribute to an overstocked market, as there is an equal, if not greater, percentage of decline in the imports of the same from other countries.

The export of sugar to the United States is more than doubled, and the same fact holds nearly good with reference to the article of coffee.

The pioneer in the production of sugar on a large scale is Jaquim M. Delgados, a naturalized American citizen, who came here in 1873, and in the following year commenced clearing and fencing ground preparatory to planting cane. In the spring of 1876 he made his first shipment of sugar to New York; since that time he has enlarged and improved his plantation until his shipments of sugar for the last fiscal year amounted to about 1,200 hogsheads of 1,500 pounds each. Mr. Delgados induced other capitalists to remove here and invest their means in this branch of industry, and at the same time encouraged a few of the Dominicans to follow their example, until now there are on the south side of the island 16 sugar estates, containing growing cane, ranging from 150 acres to 800 acres each.

In 1874, when General Gonzales became President, he used his influence to induce the planting of coffee and cocoa, offering a bounty to all those planting a certain number of trees, in addition to which they were exempt from military duty.

That wise measure resulted in the planting of large quantities of coffee and cocoa sprouts. But the ambitious leaders of the opposition were not satisfied to remain "outs," and towards the close of the second year of his Presidency organized a revolution which culminated in his overthrow, and thus drove into exile the best President they ever had. The evidence of his wisdom is becoming apparent in the yearly increased production of sugar, coffee, and cocoa.

The progress of improvement is slow, but it appears now to be substantial, and the inhabitants show indications of an earnest desire for progress and improvement and are more quiet and contented than formerly. For a year, now, the country has had entire peace, and the prospects seem flattering for a prosperous time on the island for some time to come. The new President is an enlightened and highly educated man, and a Catholic priest. I am of the opinion that he will use his

best energies for the advancement and prosperity of his country. The leaders of the opposition are, many of them, dead, others are in exile, and all are so rigidly watched that there seems no prospect of their being enabled to obtain a foothold in the near future.

There are indications of a considerable influx of foreigners of means who have been attracted to this country from Cuba and Porto Rico, owing to excessive taxes in the former, and the worn-out and unproductive soil in the latter. Here no tax is levied on real or personal property, and but a small export tax on the exports. Labor is cheap; common field-hands average about 50 cents per day and "find" themselves. Engineers receive from \$75 to \$150 per month, and sugar-boilers from \$100 to \$150. In most cases the skilled workmen are from the United States.

There are no railroads, canals, or other public improvements in this country, neither are there any founderies or machine-shops, or extensive manufactories of any kind; there is not even a brick made here. All used are imported.

At present I am not able to suggest anything that would have a tendency to increase trade with the United States. There is a gradual increase in most articles which appears to keep pace with the wants of the community.

PAUL JONES, *Consul.*

UNITED STATES CONSULATE,
San Domingo, October 29, 1880.

Comparative statement of the principal imports and exports between the port of San Domingo and the United States, for the years ending June 30, 1879 and 1880.

IMPORTS FROM THE UNITED STATES.

Articles.	1879.		1880.		Increase.	Decrease.
	Amount.	Value.	Amount.	Value.		
Provisions		\$347,686 45		\$426,161 43	\$78,474 98	
Dry goods		156,890 00		94,769 00		\$61,121 00
Flour	5,700	33,200 00	8,900	60,219 80	27,019 80	
Boots and shoes		4,873 50		22,500 00	17,626 50	
Kerosene	7,128	15,380 75	8,036	14,131 25		1,249 50
Soap	24,976	21,874 50	39,204	21,839 50		35 00
Machinery		18,961 00		57,892 50	38,941 50	

EXPORTS TO THE UNITED STATES.

Sugar	4,886,254	\$186,497 30	9,856,537	\$438,332 50	\$251,835 20	
Molasses	45,325	6,425 06	104,400	26,668 09	20,243 63	
Honey	66,288	32,801 31	72,822	37,014 33	4,213 02	
Coffee	27,464	4,752 38	53,729	7,919 08	3,166 70	
Hides	10,420	1,222 65	101,455	14,654 17	13,531 52	
Logwood	537	8,148 18	573	9,027 83	379 64	
Fustic	517	8,882 05	419	7,634 40		1,247 65
Lignum-vitæ	639	16,445 66	94	3,252 83		13,192 84
Mahogany	77,292	9,609 21	18,830	3,969 62		5,739 59
Total value of imports from all countries		1,202,799 55		1,193,448 80		9,350 75
Of which there came from the United States		612,760 20		719,301 80	106,541 60	
Total value of exports to all countries		585,900 47		821,892 37	235,991 90	
Of which there went to the United States		279,727 82		573,989 44	294,261 62	
Total amount of import duties		321,323 08		252,909 85		68,413 73

HISTORY, PRODUCTS, AND COMMERCE OF ST. THOMAS.

REPORT BY CONSUL THOMPSON.

In submitting the consular report contemplated by paragraphs 380 and 381 of the Regulations, I find myself laboring under disadvantages. This consular district is far removed from the mother country, and the character of information I need is accessible alone through a class of appointed and imported officials, whose courtesy is not always what it should be. I find, too, in the library of this consulate but three reports from the Department upon "our foreign commercial relations." They are for the years ending September 30, 1871, 1874, and 1878. In neither of them is there anything from any of my predecessors concerning St. Thomas—the port, island, commerce, or production. I therefore propose, if you will pardon the length of this disjointed report, to avail myself of all the reliable resources for commercial statistical information at hand, and, using a not very elegant but apt newspaper phrase, to "write up" this portion of His Majesty's possessions, and I do it the more readily because when I was appointed consul I could find no person or work that could give me any satisfactory idea of my new temporary home.

EXPORTS.

Regarding exports there is little to say. This being a free port, no statement of the denomination, quantity, and value of goods exported can be obtained. The customs laws of the place are only summarily reported for clearance under the general classifications, dry goods, colonial produce, and so on.

The only articles subject to export duty are sugar and rum, the growth and product of the islands of St. Thomas and St. John's. The former pays 5 per cent. duty on the value, and the latter $1\frac{1}{2}$ cent per gallon in extra duty. All other goods, without exception, may be exported without any duty being paid here at all.

This being a shipping point for other islands, I am not even able to furnish from the consular records the number, quantity, and value of exports from this island to the United States.

In order, however, that an idea of the extent of the exporting of goods from this port may be formed, I submit the following summary for the fiscal years 1879 and 1880.

Goods exported in steamers, whose burden was 48,575 tons, were 412 tons; goods exported in sailing vessels, whose burden was 25,146 tons, were 1,314 tons.

IMPORTATIONS.

The accompanying table,* marked A, shows the amount of importations for the past fiscal year to be \$3,768,241. This, compared with \$4,767,852 the previous year, exhibits a decrease of \$1,000,389. If it were not that these figures are from the official records of the custom-house, I could scarcely credit them, the decrease has been so great. The goods enumerated in the table referred to, with the exception of

* The tables which accompanied this report are reserved for the annual volume of Commercial Relations.

those preceded by an asterisk (*) and section (s) marks, pay import duty of $\frac{1}{2}$ per cent. on invoice value. Those prefixed by an asterisk (*) mark pay duty of $\frac{1}{2}$ per cent. also on invoice value, and those furnished with section (s) mark enter free of duty.

IMPORTATIONS FROM THE UNITED STATES.

As will be seen by tabular statement marked B, we have, I regret to say, borne nearly, if not quite, our portion of the general decrease. Thus, during the fiscal year 1878-'79, the imports from the United States amounted to \$722,895 in value, and for the same period ending the 31st of March, 1880, it was \$483,380, showing a decrease of \$239,515. I know of no other cause than the rapid decline of St. Thomas to which to trace this decrease in business. This kind of Confession is unpleasant, but facts, it is said, are often so.

AMERICAN IMPORTS IN AMERICAN BOTTOMS.

The value of cargoes in American bottoms imported from American ports into the island during the fiscal year 1879 and 1880 are as follows:

Baltimore, sundries.....	\$22,256
Boston, ice and provisions	15,290
Georgetown, coal.....	1,004
Jacksonville, lumber	1,600
New York, sundries	221,171
And from foreign ports, coal, &c	11,903
Total	272,514

The tabular statement C, showing the importations from all sources, assigns us to the third place among the countries from which this island is supplied. I hope in some future communication (it would make this too long) to adduce reasons why this should not be the case, but that we should stand at the head of the list in all important products and manufactures as well as food supplies. This consulate is flooded with illustrated catalogues and price-lists, and I suppose those who send them think it all that is necessary; but such is not the case. Orders can only be obtained on actual samples, and by sending out agents who will act fairly and honestly; then we can hope to cope with England and Germany in the importation of hardware, cottons, coal, &c. It is rather unaccountable to see England outstripping us in the manufacture of our own products, Germany remodeling our cutlery, and then to see our own goods brought from our shores in foreign bottoms!

The number and tonnage of vessels, as shown by paper marked D, that have entered at this port during the past fiscal year is, perhaps, as satisfactory as we could reasonably hope under the circumstances; yet there is room for decided improvement, which I shall, as intimated above, endeavor to point out hereafter. For the present, since the

PORT AND ISLAND OF ST. THOMAS

are so little known or appreciated by our people at large as a point of commercial and otherwise general importance, I shall have to content myself with a brief historical and comparative sketch of the same. The island lies in latitude $18^{\circ} 26' 42''$ north and longitude $64^{\circ} 48' 9''$ west. Its length is about 13 miles east and west, with an average breadth of

3 miles. It is formed by a mountain ridge extending the whole length of the island, reaching an elevation of from 1,400 to 1,600 feet. It is bounded by St. Croix on the south, distance 40 miles, and Porto Rico on the west, distance 36 miles. It was discovered by Columbus in 1493, during his second voyage to the West Indies. Of its ancient inhabitants—two Indian tribes, the cannibal caribs and their counterpart and victims, the Arrowauks—I refer to older historians. Suffice it to say, except the traditional stories of "Black" and "Blue Beard" castles, there is not a trace of even the buccaneer left.

Gliding down the stream of time and passing over St. Thomas's first colonization by the Dutch, in 1657, and its possession, for a short time, by the English in 1667, after the sturdy Hollanders had left it for New York, we come to the landing of the Danish West India and Guinea Company, in 1671, and then to 1685, when a company of Brandenburgishers came in and established a factory, the Dutch being the principal shareholders. In less than two years thereafter 50 persons found employment in this factory, and five vessels actually engaged in the trade.

The colony of St. Thomas was then enlarged by refugee French protestants, who fled from St. Christopher's after the revocation of the edict of Nantes. In the meanwhile slavery was introduced and the island put in a flourishing condition. In 1766 the port was made free, and in 1801 was again surrendered to the English but restored to Denmark the ensuing year. Two years later the island was devastated by fire; \$11,000,000 worth of property was destroyed. Nearly ruined by the same devouring element in 1806, the island was again given up to the English in 1808, who held till 1815, when it was once more occupied by the Danes, its rightful owners, who have been in peaceful possession ever since. And now I have but little more to add to the history of St. Thomas till 1867, when we find its inhabitants all agog with the expectation of the island being transferred, by purchase, to the United States. How that bargain fell through, no one here seems to know. Some say it was on account of the terrible hurricane and earthquakes of that year; others say the amount asked was too large, and the United States must have repented her bargain at the last moment; and some say one thing and some another.

PAST AND PRESENT.

The island forty years ago and the St. Thomas of to-day are totally different. The town was then called "Charlotte Amalia," its true name, but has since, by general consent, assumed the name of the Island St. Thomas. Then the island was dotted over with palatial homes, and broad acres of waving cane stretched out in every direction. There were 17 or 18 sugar plantations, some containing over 300 acres in the highest state of cultivation. Sugar, molasses, rum, fruits, and a certain kind of lumber were among the exports. The town of Charlotte Amalia, the capital, was inhabited by an intelligent, cultured people. Capitalists gathered here and imported large stocks of merchandise from America and Europe, supplying the Spanish Main, St. Domingo, Hayti, Porto Rico, and other islands. This was then the storehouse and distribution post-office for all the islands in this part of the sea. Of course the town flourished, and the clusters of houses, with their brilliant red flat roofs, which rose from the summits of three hills, projected from the sides of a dark range of mountains, formed a noble background, and was, and is still, "a thing of beauty." No prettier picture, it has truly been said, for an artist's pencil exists anywhere than these three little towns in one, as they descend to the water's edge, lined with wharves and jetties.

But with the abolition of slavery in 1848 the planters and most of the merchants sold out and left. The negroes flocked to town and began to eke out a precarious existence, as porters, stevedores, cooks, washers, and domestics generally, and, in some cases, barbers, hucksters, and "herb doctors." The magnificent country homes and plantations dwindled into what are now called "estates," upon which, here and there, are coal-kilns, vegetable patches, and a few scrubby cattle, long fet-locked ponies like the mustang found upon the prairies of Western Texas, only smaller, and asses weighing from 100 to 250 pounds. These in part supply the local demand. Otherwise, a waste of prickly, scrubby undergrowth occupies places where industry once held sway.

Business has fallen off, too, from other causes. The increased facilities of different lines of steamers now running to the very doors, as it were, of former customers, who now import direct, have forced what few merchants of capital we have left to import very sparingly.

PORT CHARGES.

Another source for cause of depression in trade is harbor and port fees. Under the present administration, I have said elsewhere that this place offers many advantages as a port of call, and so it does; but ships' disbursements have been increased by charges unknown in the olden time. Then the services of a local pilot were only given when specially called for, and vessels were only boarded when coming into the harbor by the harbor-master, and taken charge of for the purpose of proper anchorage; no health officer was required unless the harbor-master found the vessel unprovided with a bill of health or there was sickness on board. Now, while pilotage is not a compulsory charge, most masters are not aware of it, and take a pilot, who is ever in wait on the outskirts when he is not needed.

In other words, take the case of a vessel of 500 tons arriving and leaving at, say, Barbadoes, in ballast, and remaining there any length of time, the entire charge is only \$3. A vessel of the same size pays here, with harbor dues, health visit, pilotage in, port pass, &c., from \$40 to \$50! Of course, in time of epidemics precautionary sanitary measures are imperative, and at all times prudent, and when a pilot's services are called for he should be paid; but there is reason in all things; and when the spirit of competition is rife, as it is among these islands, it is a short-sighted administration that does not curtail if not altogether abolish such supernumerary fees. And there is another matter of which I feel we have a right to complain. The "bumboat" business is a heavy source of revenue to the government. The bay is full of them; and instead of the council passing an ordinance prohibiting them from bringing seamen ashore without permission of the proper officers, I shouldn't wonder if it is encouraged. At all events, scarcely a vessel comes here that the master does not have more or less trouble with his crew. They come ashore, become intoxicated, and the next thing I hear of them they are in the fort; and these fort charges are immense. In ordering a seaman's arrest, too, the police bill is excessive; in this, especially, that a double charge is made—\$3 for apprehending and \$3 for arresting. Further comment here is unnecessary.

Thus it will be seen, when the burden of slavery was lifted from the shoulders of the West Indians they do not seem to have enjoyed the elastic vitality of the people of the Southern States of our Union, who

required only a few years to repair most of the damages, and, phoenix-like, rise from their ashes better built and more prosperous than ever.

THE CENSUS OF ST. THOMAS

has not been taken for many years, but it is confidently asserted by those who ought to know that the population of the island is upward of 15,000; and I am told by the same reliable informants that there are not many native white families living here who have not more or less negro blood in their veins. Of course there are some Danes proper, English, Germans, and, maybe, Spanish and French, who have come here and gone into various kinds of pursuits, whose blood and race idiosyncracies are as pure as any of those of their mother countries. I had reference to the native element, of which the blacks and clearly marked mongrels constitute over three-fourths.

BUSINESS RESTRICTIONS.

There are very few Americans here. I have met with only a half dozen or so gentlemen and three or four ladies who were born in the United States, and these are wedded to foreigners. In fact, no one can do business here and retain his citizenship in another country. To engage in business he must take an oath of allegiance to the king. Under the alien laws of our country a Dane can go there and compete with any citizen in the pursuit of wealth and enjoy all immunities, whether legal, social, or otherwise. But not so with an American in any of His Majesty King Christian's possessions. I submit that "it's a poor rule that don't work both ways."

AGRICULTURE.

The theory that St. Thomas is not an agricultural island is not tenable. That she has her drougthy and rainy seasons, as well as times of hurricanes and earthquakes, I admit; but these are the common lot of all West India Islands, and no more distinctive here than elsewhere. I regret that I cannot put my hand on a comparative statement of the average amount of rainfall of late years and a few decades ago, but I venture the assertion that there is little, if any, difference, and the theory advanced by his excellency the governor of the island to me some time since that "the soil had been washed off the hillsides by the freshets during the rainy season," with all due deference, I beg to say, will not hold good. If that were so, the bay itself would have been ruined and the valleys filled up. The trouble is, we are sadly in want of a thrifty, hard-working class of laborers, who understand and appreciate the necessities of an enlightened and prosperous agriculture; a people, if you please, who do not fritter whole lifetimes away in the vain hope of obtaining an easy fortune through lotteries, or other equally wild-goose sort of a chase after the marvelous sums of money supposed to be found in the thousand and one wild plants indigenous to these islands, whose wonderful therapeutical qualities are always so "mysteriously discovered" by some erratic person "in the West Indies." With this element let us have the leaven of a healthy, wholesome public sentiment; one that teaches that it is more manly to pull off one's coat and lay hold of any and all manner of honest work than it is to beg and steal, and that it is more genteel to "pollute a pair of soft hands" with the "vulgar packages" of the necessities of life that have to be carried and fetched from market places than it is to assume a sort of dressed-up provety-

stricken dignity. Give us these, and with the natural advantages we enjoy, St. Thomas will again "build up her waste places and blossom as the rose."

That this is the home of the sugar-cane, the sugar, molasses, and rum exported in former years fully attest. Within the inclosure of my own yard there are near a dozen of the finest quality of fruit trees. The orange, pine-apple, banana, guava, lemon, cocoanut, lime, mespel, plantain, tamarind, pomegranate, apricot, cherry, gooseberry, plum, genip, mango, mana or bread-fruit, alligator-pear, and, in fact, all the tropical fruits are here. Some of them are exceedingly nice for table food. The mespel, especially, for instance, is really delicious. It grows nearly as large as a man's fist, is round like a peach, very juicy, of a sugar taste, and has seed like our persimmon. Alligator-pears (so called by the natives, but it is as frequently written *avicato* or *aqueate*) are of about the size, shape, and appearance of the Mississippi pawpaw. Peeled, sliced, and served with salt and pepper, it makes a splendid breakfast dish. Its seed is about the size and shape of a guinea-hen's egg.

Plantains are used exclusively as a vegetable, and prepared for the table by frying and other ways. The banana is generally eaten as a fruit, though sometimes as a vegetable. Both are considered very wholesome.

(This reminds me of the vast difference between the banana and plantain. The former is round and smooth—the best quality about the size of one's finger—while the latter is of an octagonal shape, and has three to five flat sides. It is the plantain that is sold mostly in the interior towns and on the trains in the United States to people who never saw a banana and perhaps never will.)

Pine-apples, guavas, and tamarinds are converted into preserves, marmalades, jellies, &c.; the first, also, frequently into sirup. These are very costly luxuries, however, of which I make mention merely to show the field open here to intelligent and industrious horticulturists; for, if there is an orchard on the island, or cultivated fruit of any sort, except a few banana trees that chance to grow in gardens, I have not been able to ascertain the fact. Besides, the better class of these fruits sells at fancy prices.

There are some few vegetable gardens, and individuals who sell sweet milk, but we have no dairies, poultry-yards, or even fruit-stands. Vegetables and fruits are sold at the market place and peddled from trays by negro women. They are, like poultry and eggs, mostly imported from other islands. Even the vegetables sent out from the United States in ice ships, to use the expression of one of our tradesmen, "go off like hot cakes."

THE MARKET PLACE

is near the center of the business portion of the city, is an open square of about one and a half acres, and is presided over by blacks—mostly elderly females—arranged 8 to 10 feet apart, with small parcels of vegetables, fruits, charcoal, &c., piled up around the vendors in trays and on the ground, in quantities to suit purchasers, ranging from one to twenty-five cents or more. The foregoing and other products, including breadstuffs, meats, &c., are found also in adjacent stalls, shops, and hucksters' stands, indoors. Blacks (cooks), females, as a rule, do the marketing. It is not genteel (?) for whites or blacks, as to that, other than servants, to carry and fetch things from market, or even small packages from stores! This is a department of business an usurped custom has

assigned exclusively to the brigade of little ragamuffins of the city
But to the

LOCAL PRICES CURRENT,

which will give an idea of table and household expenses, viz:

Bacon hams.....	per pound..	\$0 25 to \$0 40
Fresh beef.....	do.....	16 to 20
Mutton.....	do.....	20 to 22
Sugar.....	do.....	8 to 12
Coffee.....	do.....	20 to 25
Lard.....	do.....	20 to 23
Yellow corn-meal.....	do.....	5
Flour (Lawrence brand).....	do.....	6
Turkeys (cocks).....	each.....	2 50 to 3 00
Turkeys (hens).....	do.....	2 00 to 2 50
Chickens.....	do.....	25 to 40
Eggs.....	do.....	3 to 5
Butter (Danish).....	per pound..	60
Oatmeal.....	do.....	15 to 20
Potatoes.....	do.....	6½ to 7
Plantains.....	each.....	2
Bananas.....	do.....	1
Alligator-pears.....	do.....	3 to 5
Oranges.....	do.....	1 to 2
Fish.....	per pound..	7
Pine-apples.....	each.....	10 to 15
Servants' hire, cooks.....	per month..	4 00 to 5 00
Washer and ironer.....	do.....	5 00 to 8 00
House man.....	do.....	8 00 to 10 00
Gas.....	per 1,000 feet..	4 50
Ice.....	per pound..	2

Fresh butter and the better brands of flour and white corn-meal are not to be found in the market. For family consumption these are imported direct.

• THE HARBOR OF ST. THOMAS

is unquestionably the best of any of the Virgin group of islands. Its average depth is about 6 fathoms, and will accommodate at least 2,000 vessels, while it is almost perfectly land-locked. Its geographical position, and this being the headquarters of the telegraph station, also gives it many advantages. Besides, her floating-dock, marine repairing slip, steam factory, good mechanics, extensive ship-yards, &c., give St. Thomas facilities for docking and repairing all classes of vessels in distress and seeking a port of refuge, found nowhere else in the West Indies; and these wanting freights and charters for America or Europe can always be supplied, as charter orders are found constantly in the market, which can be closed immediately, or, at farthest, in a few hours, by confirmation by wire when the cable is working.

STEAM COMMUNICATION.

Our steam navigation facilities, too, are excellent. This is the head junction of the following companies:

The United States and Brazil Mail, the Quebec and Gulf Ports, the Hamburg American Packet, the West India and Panama, the Generale Trans-Atlantique, Royal Mail, and Herrera, besides other lines. Three of these have branch inter-colonial boats for Windward and Leeward Islands, and the Spanish Main, &c., which start soon after the arrival of the Atlantic steamers, on their respective routes, carrying mails, passengers, and cargo. And in this connection I beg to make a suggestion.

It had occurred to me that two or three properly built and well appointed small steamers to coast around among these islands and gather up cargo for, and act as feeders to, the New York and Brazilian line of American steamers, would do a remunerative business and greatly extend our trade. But to accomplish the ends desired they should be essentially American boats—owned and manned by our own people, and bearing our own colors.

THE HEALTH OF THE ISLAND

is unexceptionable, and in times past it has been a place of resort for invalids, especially for those afflicted with Bright's disease of the kidneys. The winter season, however, is the proper time to come, and then a home for a few months up in the mountains cannot fail to prove beneficial. I know that some years ago St. Thomas was depreciated in this respect, but it was by other islands jealous of her commercial success. Time has sufficiently demonstrated that, with an efficient quarantine, the island can be kept perfectly free from yellow fever and those other diseases so fatal to life in the tropics, which, if they ever existed here, must have been imported from our boastful neighbors, who, with less shipping frequenting their ports, and therefore not so liable to infection, were, from the low, swampy nature of their lands, really and truly the homes of malaria.

THE HOUSES

are low, but cover a good deal of space, and are very comfortable. They are stoutly built, with a view to safety in case of hurricanes or earthquakes. They are so constructed with closely fitting window and door shutters that within a few seconds the largest of them can be thoroughly ventilated or closed almost air-tight.

CHURCH AND SCHOOL

facilities are amply sufficient. There are 7 denominations and 10 churches and 28 schools—private and public—with an average yearly attendance of some 1,332 pupils, yet on every side one hears a strange language. It is a mixture of local compounding from Dutch, Spanish, Portuguese, English, French, Italian, and Indian. All the natives speak it, and to understand or be understood everybody must learn it. I understand that books have been written and printed in it, but I nowhere hear of them being taught in school.

THE LOCAL GOVERNMENT

is supported by taxes and revenues derived from commerce. The budget of the last fiscal year, beginning April 1, 1878, and ending March 31, 1879, for St. Thomas, with the island of St. John included, shows a total revenue of \$204,025 and an expenditure of \$206,271.20, thus exhibiting a balance of \$2,146.20 on the debit side of the ledger. The budget for the past year has not yet been made public. It has been held back awaiting the result of a bill now pending before the Diet at Copenhagen, in which it is proposed to transfer the military expense of the colonial government to the State treasury. It is supposed that the bill will certainly pass and thus relieve the colony of a rather burdensome luxury, amounting to \$28,720 annually. However I gather the necessary data, in the aggregate, from a report made by the governor

of the island to the colonial council a few weeks ago. That report, embracing the financial year ending the 31st of March last, shows an increased expenditure of about \$12,000, which, with a decrease on the revenue side of some \$4,000, further shows a total deficit in the past year's budget of not less than \$16,000. The customs dues are \$9,000 less for the past year than for the year previous. This last item, I regret to say, points with an unerring finger to a decline in trade; yet we gather encouragement from another source.

The bill for some time "hanging fire" before the Cortes, in Madrid, for the purpose of abolishing the franchise of 6 per cent. on duty, by direct importation into Porto Rico from producing countries, I understand, has become a law. If that is so, it is to be hoped that the change will materially revive the trade between Porto Rico and this place.

MONETARY AND EXCHANGE.

The rates given are those of this date, and subject to the fluctuations of the exigencies of the times.

Description.	Rates.	
	Buying.	Selling.
Exchange on New York, 60 days sight (gold)	<i>Pr. cent. prem.</i> 1½ to 2	<i>Pr. cent. prem.</i>
Exchange on New York, 3 days sight (gold)	3 to 3½	5½
Exchange on London, 90 days sight	4.97½	5.05
Exchange on Paris, 90 days sight	5.15	5.05
Exchange on Hamburg, 90 days sight	4.14	4.06
Exchange on Bremen, 90 days sight	4.18	.....
Exchange on Copenhagen, 90 days sight	1.07	1.11

Specie.—American gold, 2 to 2½ per cent. buying premium, 3 per cent. selling premium; American silver, 2 per cent. buying premium, none for sale; Spanish gold, ½ to ¾ per cent. buying premium, ½ per cent. selling premium; French gold (5 francs), 98 cents; French silver (5 francs), 97 cents, British gold (sovereigns), \$4.95 to \$5.05; British silver, \$4.85 to \$4.90, none for sale; Mexican silver dollars, 93 cents.

Money market quiet, few bills of exchange offering, rates firm, and money plentiful. This island is flooded with Mexican dollar-pieces, which can only be turned over at a wretched discount and loss, as they are taken in trade, in small payments, at par and of course accumulate very rapidly on the merchant's hands, who, in turn, cannot use them in his bank and broker transactions except at a discount of from 6 to 7 per cent. to convert them into a bankable par value.

This place also suffers from the want of small change (the smaller silver and copper coin), there not being in circulation near enough to meet the requirements of trade, and what there is bears a par value and holders will not give it out, even in trade, unless at a premium for Mexican dollars, the money most common in circulation.

VICTOR THOMPSON, *Consul.*

UNITED STATES CONSULATE,
St. Thomas, West Indies, October 1, 1880.

SPURIOUS TURK'S ISLANDS SALT IN THE UNITED STATES.

OPINIONS TRANSMITTED BY VICE-CONSUL DARRELL.

In reply to your dispatch under date of September 17 last, I have the honor to inclose herewith two copies of the Royal Standard newspaper in regard to the sale in the United States of spurious Turk's Islands salt, which was the subject of the dispatch No. 50, written by the late Mr. Van Wyck.

JOAN W. DARRELL,
Vice-Consul.

UNITED STATES CONSULATE,
Turk's Island, October 5, 1880.

[From the Royal Standard of Saturday, July 31, 1880.]

The past week has been a lively one for salt gathering; the large supplies of provisions, for man and beast, which arrived from New York late last week giving a great impetus to all our salt-works. Our proprietors are producing a first-rate quality of salt—salt which, for curative qualities, will compare favorably with, if not excel, any salt produced on the face of the earth. The constant and increasing outcry throughout the whole of the West Indies and all other hot climates against the bad quality of American salted meats, the utter impossibility of keeping them sound more than a few weeks after arrival within the tropics, has had its effect on all salt producers, with whom, it was said, the trouble lay, and our proprietors have been among the first to endeavor to remedy the evil, so far as these islands are concerned, by making a salt as free from the chlorides and other impurities as it is possible for it to be made on a large scale. Hence a large item in the increased cost of production of the stock now on hand, which forces holders or producers to ask an advance on former prices, and has had the effect of stiffening the market here more than we have before noticed. If a good article, with the best curative properties, is wanted, the cost of production must be increased, and unless present prices are sustained, it will be impossible to keep up the required standard.

[From the Royal Standard of Saturday, August 7, 1880.]

Two correspondents in to-day's issue call special attention to a matter which deserves the serious consideration of every one interested in the welfare of these islands. Several times within the past ten years we have copied and commented on complaints made by the West India press as to the falling off in the quality of salted meats imported from the United States, and now it appears the crisis has come. Meats and fish cured with the handsome-looking salt imported from the Mediterranean are fair to look at, but as soon as they enter the tropics and are opened they at once spoil—become soft, putrid, and unfit for food. This condition is brought about by the deleterious effect on the meats of the chlorides contained in the salt, a very small portion of which counteracts its curative qualities. But the grave and great question is how to get the matter clearly before the "packers" or "consumers" of salt in the United States, if only for the purpose of vindicating the good name of the staple of these islands. We say it is a grave question. Our correspondents are no doubt right in their assumptions, but how can we reach the fountain head? How can we remedy the evil? Only by united action of the proprietors, calling to their aid the well-known sturdy ability of Mr. Van Wyck, the United States consul, who has always shown a lively interest in the commercial welfare of these islands; and, as a further aid, soliciting his honor the commissioner to obtain from the British consul at New York such information as will enable them the more readily to convince the consumer that he has been deceived by the importer.

To the Editor of the Royal Standard :

MR. EDITOR: Permit me, through the medium of your paper, to invite the attention of our local proprietary body to a matter of grave import, directly affecting their

interests in the salt ponds of these islands, as manufacturers of an article of commerce whose nature and properties are admitted by competent judges, to class A 1, and also to impress on our local government the necessity for some prompt specific action to counteract the effect of interested parties, consequent upon their representations and acts by foisting upon the consumers of salt (as described in bills of parcels) in the interior of the United States of North America a European production, and disposing of the same as Turk's Islands salt.

The action on the part of the importers of salt in the seaports of the United States was based and doubtless caused by a succession of bad seasons with the Turk's Islanders, and, as this unequal strain is now effectually removed by one of our old-time seasons of salt as free from all foregoing substances as it is possible to have it made by solar evaporation, a knowledge of the fact of such representations on the part of certain parties in the United States will serve to unite as one, in a just and legitimate cause, a hitherto lethargic class of men engaged in the manufacture and production of salt.

I assert, Mr. Editor, it behooves us, as the producers of an article of commerce known world-wide as "Turk's Islands salt," to bring prominently before the consumers of our staple product in the United States of America the following facts:

1st. That we are prepared to supply any demand for a superior quality of Turk's Islands salt at a moderate figure.

2d. That the most careful supervision exists in every detail by experienced persons in its manufacture; hence the production of an article the curative properties of which cannot be equalled, far less excelled.

3d. That our salt proprietors should unite in a petition to the Secretary of State of the United States at Washington, praying him to bring the matter referred to under the immediate notice of the Secretary for the Interior, so that justice may be done to the salt interest of these islands, and that the repeated inquiry may be answered as to the curative qualities of our Turk's Islands salt not coming up to its former standard. The answer to which is, *other and inferior qualities of salt have been substituted in its place*; hence the loss to packers of meats in the United States and to the purchasers and consumers of salted provisions abroad, especially in tropical climates.

Yours, &c.,

PRO BONO PUBLICO.

GRAND TURK, July 31, 1880.

To the Editor of the Royal Standard:

DEAR SIR: It has been known for some time to the principal salt merchants of this colony that large quantities of European and Syracuse salt are sold in the United States as Turk's Islands salt, thus borrowing the good name that the salt of this colony has so long merited for its curative qualities, to palm off an inferior article on the American consumers; but I think that, with the large stock now on hand and the probability that the wet cycle of the last few years is at an end, the time has arrived when our government and salt merchants should unite in making an effort to put a stop to or counteract these frauds practiced on the commerce of this colony.

This so-called Turk's Islands salt is fair to look at, but so is a "whited sepulchre," and the comparison is not at all far-fetched, as the frequent putridity of the meats, fish, and other staples of commerce is often the result of using apparently good, but really an inferior salt for curative purposes, especially for such as are imported to the tropics—as your readers have often found to their loss and disgust; and you are well aware, Mr. Editor, that it is the common experience throughout the West Indies of late that American salt provisions, even of the best brands, do not keep as they used to when Turk's Islands salt was more largely used.

A gentleman who has just returned from a visit to his native State—New York—informs us that he was frequently asked by his friends and others in the interior of the State, "What is the matter with the Turk's Islands salt? Of late we cannot cure our meats with it so as to keep any time." This gentleman was in a position to prove to his friends that in consequence of the short crop of the past season but very little of the staple of these islands reached the United States last year, and that but a very small percentage of that little went to New York, and that in fact this was more or less the case for the past three years. He also pointed out to them how they were deceived in buying inferior salt for Turk's Islands salt, and showed them a very simple test of detecting the imposition, viz, that of dissolving some in a tumbler of water, when, if the solution is made of best Turk's Islands salt, it will be quite clear, with no precipitation; but if inferior salt is used for the solution it will be quite milky and murky, and after standing for some little time there will be more or less precipitation, according to the quality of the article. The above is a very simple and good test for *sulphate of lime* and other insoluble impurities largely contained in inferior salt, but unfortunately it is no test for the deleterious and deliquescent *chlorides of calcium and chlorides of magnesium*—more difficult of detection, and of which the smallest percentage is so destructive of the curative qualities of salt.

I would especially point out to the "packers," dealers, and consumers of salt in the United States that the manufacture of salt has been greatly improved in this colony of late years, especially since the introduction of the manufacture of fishery salt, and parties abroad ordering salt from any of the principal salt merchants of this colony, or their recognized agents abroad, may rely on getting an article of greater purity than in former years.

I remain, dear sir, yours, very truly,

PURE SALT.

GRAND TURK, T. L., August 4, 1880.

CONTINENT OF ASIA.

BRITISH INDIA.

TRADE OF BOMBAY WITH THE UNITED STATES.

REPORT BY CONSUL FARNHAM, OF BOMBAY.

From July 1, 1879, to June 30, 1880, the following were the direct importations from the United States. It should, however, be borne in mind that American goods reach here from England, ordered by dealers here from their English correspondents:

Kerosene oil	cases..	504,800
Lumber	feet..	32,000
Ice	tons..	2,609
Manufactured tobacco	cases..	340
Rosin	barrels..	350
Turpentine	cases..	200
Florida water	do..	306
Sarsaparilla	do..	250
Painkiller	packages..	76
Drills	bales..	75
Domestics	do..	75
Merchandise	cases..	66

The exports to the United States during the year were as follows:

Linseed	bags..	57,560
Wool	bales..	1,720
Bags and bagging	do..	1,607
Scrap iron and iron rails	tons..	3,475
Hides and skins	bales..	925
Dates	cases..	857
Horns	bundles..	2,436
Carpets and rugs	bales..	21
Gum	cases..	121
Nux vomica	bags..	244
Spices	cases..	150
Ginger	bags..	81
Mustard seed	do..	512
Jewels	cases..	14
Silverware	do..	2
Pottery-ware	do..	11
Brasswork	do..	10
Precious stones	do..	1
Mother-of-pearl shells	barrels..	53
Furniture	cases..	20

There has been a marked improvement in trade between Bombay and the United States during the time under review, and I hope business will increase between the two countries. Much of the coming year's business will depend upon the monsoon rainfall. Thus far the rainfall has been everything that could be desired for the growing crop.

The following table gives an account of our carrying trade as far as cotton is concerned:

Cotton exported via Suez Canal and Cape during the year ending June 30, 1880.

	Steamers.	Ships.	Totals, 1880.	Totals, 1879.
	<i>Bales.</i>	<i>Bales.</i>	<i>Bales.</i>	<i>Bales.</i>
To Great Britain.....	308,792	54,931	363,723	290,651
To Havre.....	60,448	9,351	75,999	101,821
To Marseilles.....	31,450		31,450	20,444
To Genoa.....	68,288		68,288	37,517
To Naples.....	25,050		25,050	16,547
To Trieste.....	145,485		145,485	95,324
To Venice.....	74,051		74,051	45,720
To Odessa.....	12,770		12,770	500
To Bremerhaven.....		24,322	24,322	14,650
To Amsterdam.....	2,050	5,202	7,252	17,138
To Barcelona.....	38,378		38,378	3,150
To other continental ports.....	3,750	4,800	8,550	500
To Falmouth for orders.....				2,485
Total.....	776,512	98,806	875,318	646,649

I desire in this communication to point out to American merchants the desirability of establishing a line of steamers from New York to Bombay, touching at Liverpool. I think a monthly line would answer at first—steamers to leave New York for Liverpool and Bombay, and Bombay for Liverpool and New York, at regular dates, so that shippers in the States or in India could always rely upon the steamers. Freight loaded in New York for Bombay could go in the bottom of the boats, and freight loaded here for New York to be shipped first, in order to avoid meddling with the direct shipments *en route*. This appears to me to be the one thing needful to establish a large trade between Bombay and the United States. Very many shippers in the United States would ship where they could get direct freight, and very many native merchants, particularly, would ship produce from here to the United States where they could get direct freight instead of having their merchandise transhipped to Liverpool or Glasgow, as at present.

Somebody will start this line of steamers, and I do not see why the American merchants should not take the matter into their own hands.

B. F. FARNHAM,

Consul.

UNITED STATES CONSULATE,
Bombay, July 15, 1880

PRODUCTION AND TAXATION OF SALTPETER IN INDIA.

REPORT OF VICE-CONSUL-GENERAL COBB, OF CALCUTTA.

In view of a new law recently enacted by the Indian Government, and acting upon the request made in your circular letter dated July 1, 1880, I have the honor to place before you a few remarks on saltpeter.

Saltpeter has always formed an important article of export from this port—supplying the necessary dead-weight in many vessels, especially in those clearing for United States ports. But in consequence of laws recently enacted by the Indian Government affecting the production of this article, it seems probable that the cost here will be so much enhanced

as to seriously interfere with its purchase for the American market, reaching a figure at which it will be unable to compete with the nitrate of soda produced in our own country. The price of crude saltpeter is advancing every day as supplies come in from the producing districts in smaller and smaller quantities. Before the new laws were enacted saltpeter was largely collected from petty producers, each of whom made a very small quantity, and when collected in sufficient bulk was sent forward for a market.

Roughly described, saltpeter is produced in the following way: The earth dug from the natural niter beds is placed in straining-cloths over a metal pot, and water poured on it, lixiviation follows, and the resultant water in the pot is then boiled. In this process a saltpeter deposit is formed on the sides of the pot; this is known as *kutch* saltpeter, from which, by successive boilings, is made the crude and refined saltpeter. The water in the pot is then turned off. This water still contains some saltpeter and ordinary salt, and is saved and used over the lixiviation of fresh soil, and thus used over and over again.

The production and importation of ordinary salt in India is a government monopoly, paying a heavy revenue, and of which the government is extremely zealous in preventing contraband production or importation.

The new saltpeter laws, besides placing a heavy tax on the production of saltpeter itself, compel the producer to take the water after the first boiling process described above, extract all the salt therefrom, and pay a tax on the amount thus extracted. Consequently it is easy to see how the making of this law will virtually prohibit the manufacture of saltpeter save on a very large scale, and entirely preclude its production by the poorer people in a small way, who heretofore, in the aggregate, have been the largest producers.

It is very doubtful if this law remains long in force, but if it does it will, for some time at least, place a serious obstruction in the way of its exportation, at least for the American market.

A. B. COBB,
Vice-Consul-General.

UNITED STATES CONSULATE-GENERAL,
Calcutta, October 20, 1880.

LABOR IN CHINA.

REPORT BY CONSUL-GENERAL DENNY, OF SHANGHAI, ON SKILLED AGRICULTURAL AND COOLY LABOR IN CHINA, AND THE COST OF CHINESE SOLDIERS.

In view of the fact that China has been supplying the United States with cheap labor for the past few years, I have thought that perhaps some statistics, as well as comments, upon the amount of wages paid the class of laborers in China from which has been drawn the greater portion of this supply, together with cost of living, &c., might be of some interest to the Department of State.

In preparing these memoranda which I now have the honor to submit, in addition to my own observations during my residence in China, I have been assisted by one or two old residents, as well as by the reports of some of our consuls made to me in compliance with a circular letter addressed to them on the 24th day of April last.

I have endeavored to condense the matter as much as I deemed con-

sistent with the importance of the subject, in the hope that brevity would secure for it that attention which might be denied to a more lengthy document.

For this purpose, and to better illustrate the value of labor and the cost of subsistence of the working classes in China, I have subdivided this dispatch into three distinct categories, viz:

1st. Skilled labor.

2d. Agricultural labor.

3d. What is known as Cooly labor.

Before, however, proceeding further, it should be mentioned that the information which follows is not intended to represent the labor question merely as it appears at the open ports, but as it is found to prevail all over the country as between Chinaman and Chinaman; for it would be quite misleading to form an opinion merely from what we see and hear at any one of the nineteen treaty ports, which would be a mere drop in the ocean as compared with the whole of China.

The first subdivision which I shall notice is—

SKILLED LABOR,

comprising artisans, manufacturers, &c. These people live mostly in towns or cities, where the higher cost of living and house rents exact a correspondingly higher income.

Art, taste, and genius, while highly appreciated by the people, do not, as in Europe and America, command that high premium which so much encourages art. Sometimes a painter will be rendered more or less celebrated by the boldness of his brush and by his genius in imitating nature; his name, or seal, may become immortal, but he will during his life-time be probably no better off than his neighbor, the coffin-maker. The painter of porcelain, the designer and weaver of those exquisite patterns seen on China silks, the man who works those beautiful pieces of enamel which are the admiration of the world, is each content if he and his family earn enough to live upon, and if, after providing for a parent's funeral expenses and contributing towards one of his children's wedding, he has economized sufficiently to assure an honorable funeral for his own remains and those of his wife, he feels as though he had accomplished the object of his existence. His neighbor, the butcher, is in equally good circumstances.

When great responsibility rests on workmen, such as with gold and silver smiths, a consideration is made in the remuneration. The highest paid day-laborer is perhaps the silk reeler or spinner, for, in addition to the skill which it is necessary for these operators to possess, the silk has to be reeled off the cocoons within a limited time, and for several weeks the men have to work almost day and night. For such work the wages paid vary from \$1 to \$2 per diem.

The grand average of an income under the head of skilled labor is as follows:

For a master, per week, \$3; \$156 per annum.

For a workman, per week, \$1.50; \$78 per annum.

For youngsters or females, per week, 50 cents; \$26 per annum.

The expense of living will be, respectively:

For a master per annum:

For food, &c.....	\$72
For rent, &c.....	36
For clothing, &c.....	12

Total 120

For a workman per annum:

For food, &c	\$45
For rent, &c.....	12
For clothing, &c	8
Total	65

The females and youngsters are considered to absorb all they earn.

The master lives generally at his workshop, where he has, perhaps, two rooms, besides a place to cook in. The household furniture may be estimated at from \$20 to \$30.

The ordinary workman, if married, will share a small house with a friend and occupy one room and have access to the kitchen. He may live with his parents, in which case his earnings go to the common fund. Under such circumstances \$10 to \$15 will cover the value of his household furniture.

If a bachelor, and away from his family, he will either sleep at his employer's for a consideration, or stay with a friend; in either case his whole inventory consists of a box with his clothes and his bedding.

AGRICULTURAL LABOR.

Here it is necessary to distinguish between the owner or tenant farmer and the laborer who hires himself out by the day, the week, or the month.

On a Chinese farm every member of the family must work; even the children, when only six or seven years of age, have already some regular work assigned to them. Two and one-half acres of good arable land, with a house, the material of which consists mostly of mud and reeds, or bamboos, sometimes of stone or brick, with a roof of straw or reeds—seldom of tiles, a bullock, buffalo, or cow, or couple of pigs, a few fowls or ducks, and finally a few primitive agricultural implements, constitute the property of a well-to-do farmer.

Say the family consists of man, wife, and two children of seven to ten years of age. They live almost entirely on the productions of their own soil; 200 copper cash, or about 20 cents, a day is about the marketable value of the food consumed by such a family. The ordinary daily fare is rice, or, as in the north, bread made out of wheat-flour and millet, also some salted vegetables and a light decoction of the commonest tea. On festive occasions some pork, fowl, or salted eggs, and a cup or two of Samshee (wine) form all the "extras" these frugal people indulge in.

The budget of a farmer's family stands on an average about thus:

Value of 2½ acres of land.....	\$400 00
A good animal of draught.....	20 00
Manure.....	10 00
Irrigation.....	10 00
Seeds.....	3 00
Help at harvest time.....	8 00
Taxes, 1/10 on the gross yield of rice or wheat.....	11 00
Total expenses.....	62 00

The 2½ acres, which the two adults, with the assistance of an animal of draught and their children, can work, will yield, if the land be of average fertility, and under ordinary climatic circumstances, in—

Rice.....	\$120 00
Second crop, beans, cotton or barley	40 00
or say in all about	160 00

Deduct from this the cost of living of the family, \$73, and the total of other expenses as above, \$62, = \$135, and there will be an income for the year of \$25.

There are besides some other small sources of income which are under the control of the women, such as the raising of chickens, pigs, the making of yarn and cloth, &c. These must be set off against other expenses, for clothing &c., not enumerated in the foregoing budget.

When cotton is cultivated the yield of $2\frac{1}{2}$ acres is about as follows: Average yield about 1,600 pounds, at 4 cents = \$64; actual outlay for cultivation, \$20; mandarin tax, \$8; assistance, \$3; leaving net profit of \$33.

This yield can only be produced upon land adapted to the growth of cotton. The cotton is either sold (in this case it is with the seed on) or so much is retained as may conveniently be spun and woven at home.

A woman manages to spin about one-third pound of yarn (woof) a day, which labor is worth 6 cents. For the manufacture of the warp a process is adopted which necessitates the assistance of two or three persons, and for this the neighbors assist each other, just as the loom for weaving is often the property of several families or of a whole village.

Two classes of cloth are made in the country, viz: 1. A heavy quality, 30 inches wide, in pieces of $6\frac{1}{2}$ yards; 2. A lighter quality, 46 inches wide, in pieces of $9\frac{1}{2}$ yards.

A woman weaves one piece per day; sometimes more.

To convert raw cotton into one piece of cloth involves an average of six working days, and the weight of the piece averages about $1\frac{1}{2}$ pounds, and is worth about 60 cents.

The farm laborer hires himself out by the day, the month, and, less frequently, by the year. The value of his labor varies according to the season of the year. During harvest time he gets, besides the meals, worth about 10 cents, from 10 to 15 cents per day, or 70 cents to \$1.05 a week. If his employment be by the month he gets \$1.50 to \$2 a month, besides board.

For permanent employment or employment by the year the wages are lower, averaging about \$12 per annum, with board and lodging. When working for short terms, lodging is no great consideration with him, for he will always find rough accommodations with a friend or relative. Men of this class defray their house rent with about 50 cash a month. About \$2 per annum will keep his wardrobe in a state adequate to his scanty wants.

A man who saves \$3 to \$4 a year does fairly well, but the majority, live from hand to mouth, and their whole life is but a hard struggle to fight the hungry wolf from the door.

COOLY LABOR.

Herein are comprised the carriers, boatmen, the wheelbarrow men, &c.

Taking the rates ruling at all the great commercial centers of this empire, the grand average of a man's earning is about 150 cash, or 15 cents a day, which is equal to \$4.50 per month. But it varies so considerably, according to supplies and demand in different localities, that the minimum is as low as 5 cents a day, while the maximum is as high as 30 cents, without food or lodging. Much also depends upon the physical strength of the men; the endurance and strength of some being actually marvelous. Take, for instance, the tea carriers in the mountainous parts of Western China. They carry on their back a load of from 300

to 400 pounds weight, across difficult mountain passes, and travel with it for twenty consecutive days. They are considered well paid at 25 cents a day.

An ordinary cooly's monthly account would stand about thus:

Receipts in wages.....	\$4 50
Expenditures for food.....	\$3 00
Expenditures for lodging.....	50
Incidental expenses.....	50
	<hr/> 4 00
Net income.....	50

In speaking of the gold diggers on the Han River (in the province of Hupeh), Baron Von Richthofen, when writing to the Shanghai General Chamber of Commerce in 1870, says:

The diggers earn from 50 to 150 cash, or 5 to 15 cents a day, per head. From the quantity of gravel washed in a certain time, and the yield of one day's work, which I saw being concentrated in a pan, I calculated that seven men are able to wash 20 tons of gravel a day, and that the average yield in gold is about $3\frac{1}{4}$ to 4 cents per ton.

Coal is mined in many parts of China entirely by hand, and to say that it can be sold at \$1 per ton at the pit's mouth, with profit to the owner of the mine, is a striking illustration of the cheapness of human labor in this country.

Most of the cooly labor in China is controlled by certain houses as companies. Strong and reliable coolies are, if possible, kept indebted to them by advancing to the coolies money while they are out of employment; hence, this labor is nearly always under mortgage to the hong (house), and in this way there exists a good deal of slow or forced labor. But the principal secret of success of those companies which sublet cooly laborers seems to be their holding themselves responsible to the employer for the cooly's actions. They undertake to make good any damage, whether arising from dishonesty or carelessness. They prosper while the coolies almost starve.

In all the foregoing estimates of the cost of the laborer's living no allowance is made for the expenses which the great prevalence of opium-smoking and other vices entail.

Although such habits predominate among the higher classes of the cities, yet no inconsiderable percentage of the coolies and country people is addicted to them. Consequently, in many instances where there would seem to be a probability of surplus earnings, there is actually none. The main motive of practicing economy with every Chinaman is, firstly, to be able to take a wife; secondly, to perform his duties to the manes of his ancestors; and, thirdly, to defray the expenses of his own funeral. Indeed, wedding and funeral expenses seem to be the heaviest items of expenditure with these people, as they range from fifty to several hundreds of dollars.

CHINESE SOLDIERS.

Although perhaps not pertaining to the labor question, strictly speaking, it may not be out of place to state the cost of the Chinese soldiers. According to official statements made to the throne, it amounts, for rank and file, on an average, to 50 taels (\$67) a year per head.

These figures need no comment, as they speak for themselves.

CHINESE AND AMERICAN LABOR.

With the class of cheap labor of which I have been speaking, this empire can supply the world. Is it strange, then, under such cir

stances, that the mind of a necessarily more expensive laborer, with entirely different hopes and aims in life, should become alarmed at the prospect of a stubborn competition with it?

China stands to-day where she has stood for thousands of years, firmly wedded to Joss and her idols, looking backwards, venerating the paths trod by her ancestors, and with no interest in any civilization but her own. On the contrary, there has been laid broad and deep upon the American continent the foundation of a society which secures the greatest good to the greatest number, and whose motto is "Onward and upward." There will be realized the full strength and highest culture of the human intellect, and there will be witnessed the grand triumph of civil and religious liberty. The down-trodden and oppressed of other lands who hope for the attainment of these ends have been invited to come and lend a helping hand, *but none others.*

And since the laboring masses of the United States are in full sympathy with and are engaged in promoting the best interest of the government, and since, for this purpose, it became necessary for them to subscribe to the rules of society under it, it would seem to be great injustice to compel them to compete for an existence with a labor belonging to a civilization going in an opposite direction from their own and which can never sympathize with it.

O. N. DENNY,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Shanghai, June 23, 1880.

OREGON LUMBER IN CHINA.

REPORT BY CONSUL-GENERAL DENNY, OF SHANGHAI.

The trade in pine lumber from the west coast of America is very important, in view of the probable demand and her capabilities for shipping it. In 1877, 2,000,000 superficial feet; in 1878, 8,500,000 superficial feet were imported, while during the last eighteen months there has been almost a total absence of arrivals.

Most of this lumber is shipped from Puget Sound and Portland, Oregon. It would seem that the Oregon and Washington mills, having the advantage of the San Francisco market, do not look abroad so much for a market as they should consistent with their interests. Such, for the present, may be quite reasonable, but nevertheless the China market ought never to be entirely neglected. At no distant day it will be seen that those who have been constantly in the market will reap the benefit which is bound to accrue from it sooner or later, to the exclusion of those who have remained out of it. For this reason I think it of the greatest importance that the lumber merchants of Oregon and Washington, representing as they do a country which can boast of the finest lumber forest the world ever produced, should not longer neglect a market which might be made to draw very largely upon their inexhaustible supply.

Timber, and particularly soft timber, is getting scarcer every year. For centuries the forests of China have been drawn upon regardless of preservation; and with the exception of the provinces in the remote west, some thousand miles inland, and some of the southern provinces,

the timber districts of this country may be said to be entirely exhausted. Some good timber is also still to be found in Northern Manchuria and in the confines of Corea, but the means of communication are so defective that before it reaches a point of shipping and the central markets the cost becomes almost prohibitory.

In late years Japan has been furnishing large quantities of inferior soft wood, which has always been eagerly taken up at prices which must be remunerative to the sellers. But Japan has for the last fifteen years also been carrying on the cutting down of timber in a most reckless manner, without replanting. It is only quite lately that the authorities have justly taken alarm. Then, again, the timber is short, furnishing but a small amount of lumber to the tree, and frequently full of knots at that; we may therefore reasonably expect a check in the export of Japan, and correspondingly higher prices.

Next to the Russian sea provinces and Amoor country, whence the export of timber is prohibited by the government, Oregon and Washington Territory on the Pacific coast will be China's nearest and best source of supply for soft lumber.

This branch of trade only requires being studied a little to make it a very large and paying one; it has an almost inexhaustible field in the supply of furniture, which might be sent out in pieces in a rough state, left to be put together by the Chinese on this side.

The ordinary use of the lumber hitherto shipped from this section of the United States is for planking ships and junks, for roofs and floors of foreign houses, &c.; long lengths are always preferred, as the Chinese would much rather have one long plank than two short ones, even if it has to be cut the next minute after it is purchased. The average price of lumber at this port is about \$36 (Mexican), and the import duty about \$1 per 1,000 superficial feet.

I am informed by an American citizen who is in the trade that three or four small cargoes of Oregon wood each year are always sure to find a ready market. The same can be said of the pumpkin pine brought to San Francisco by the Flume Company, and from there to this market, where it always found a ready sale. Ships loading for this port should use shingles and laths for small stowage, also fire-wood, which is the stowage generally taken by the captains in the trade, because it finds a ready market here.

Cargoes of from 500,000 to 600,000 feet are greatly preferred to very large cargoes, and they fetch generally fuller prices. The reason of this is that a small cargo is more easily financed for by the purchaser, and that detention and the expense of lightering at the Woosung Bar are avoided.

The most unfavorable time for cargoes to arrive is during the months of January and February, the time of the Chinese new year, when the native merchants are invariably wholly absorbed in the settlement of the old year's accounts; money is then generally very tight, and new transactions are not gone into until about the middle of March.

All superior lumber coming to this market should be fairly clean and sawn full thickness, thin lumber being little required except for flooring, as all the coverings, consisting of 1 and 1½ inch board, are imported from Japan.

Cargoes should be about equally divided, half plank and the other half timber.

The timber and wood imported into Shanghai during the year 1879 were as follows:

Description.	Quantity.	Value.
Poles	pieces 148,606	\$24,000
Beams	do 6,425	45,000
Planks, hard wood	do 43,958	135,000
Planks, soft wood	superficial feet 10,346,648	524,000
Teak, ebony, and other fancy woods for cabinet makers, &c.		190,000
Total value		988,000

O. N. DENNY,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Shanghai, September 3, 1880.

THE COTTON GOODS TRADE OF CHINA.

REPORT BY CONSUL-GENERAL DENNY, OF SHANGHAI.

GRAY COTTON GOODS.

This branch of trade, as in former years, shows, in the period under review, viz, from the 1st of July, 1879, to the 30th of June, 1880, a remarkable increase; and while the United States has not come up to expectations in this increase, for reasons which will be given further on, yet it should not be the least discouraging when we reflect that America possesses the means which will enable her at no distant day, it is to be hoped, to share equally with the English in the supply of this commodity, especially as it would seem that the demand is destined to assume boundless proportions. Its growth is a healthy one, as will be seen from the following figures:

GRAY COTTONS.

Description.	Stock, July 1, 1878.	July 1, 1878, to July 1, 1879.			July 1, 1879, to July 1, 1880.		
		Import, July 1, 1878, to July 1, 1879.	Stock, July 1, 1879.	Consumption, 1878-79.	Import, July 1, 1879, to July 1, 1880.	Stock, July 1, 1880.	Consumption, July 1, 1879, to July 1, 1880.
	Pieces.	Pieces.	Pieces.	Pieces.	Pieces.	Pieces.	Pieces.
Gray shirtings	4,219,574	4,764,965	915,858	5,068,671	5,537,906	977,236	5,476,488
T-cloths	888,251	2,216,872	378,546	2,726,477	2,635,610	576,636	2,437,520
White shirtings	214,580	780,119	129,997	864,702	1,112,916	182,519	1,070,394
Drills, English and Dutch	231,460	542,125	114,105	629,420	585,117	201,194	496,088
Drills, American	49,862	565,247	245,535	389,574	309,628	124,670	420,583
Jeans, English and Dutch	95,450	110,840	36,350	160,940	272,356	87,673	221,033
Jeans, American	24,180	20,352	6,320	38,212	39,040	17,000	28,360
Sheetings, English	23,336	27,379	779	40,930	139,298	10,270	123,807
Sheetings, American	97,244	404,587	74,065	427,766	648,580	147,925	574,720
Total		9,452,476		10,364,692	11,290,411		10,851,000

The whole importation of American cotton goods into China amounted to 11,290,411 pieces in 1879-'80, against 9,452,476 pieces in 1878-'79, showing an increase of 1,837,935 pieces. The actual consumption to which

we have chiefly to look in order to form a correct idea of the purchasing capacity of the country, although it does not show a large increase of American goods, yet it compares well with, and is in fact somewhat in advance of, the figures of the year's importations.

This small increase is due in part to the unsettled state of affairs alluded to under the head of Foreign Relations, which not only had its influence upon some of our merchants in sending forward their orders, but also produced an uneasiness in the manufacturing minds at home. Our goods, being a heavier and better class of fabrics, are almost exclusively consumed in the colder climates or in the extreme northern parts of the empire—Mongolia, Manchuria, &c.; as, for instance, last year, in sheetings, Tientsin, Newchwang, and Chefoo demanded 533,149 pieces, while all other ports took only 66,750 pieces. Of drills, the above-named ports took 387,543 pieces, while the other ports took only 95,638. Anything, therefore, which interferes with the peace and prosperity of the northern portion of the empire touches this trade in a most vital point. Thus the recent terrible famine, which scattered desolation and death throughout Shansi and adjoining provinces, prejudiced this interest materially; hence, as its horrible effects disappear, the trade increases. The frequent rumors of war between Russia and China, last spring, had the effect at one time of almost stopping it, as will be seen from the comparative statement of shipments.

Months.	Sheetings.		Drills.	
	1879.	1880.	1879.	1880.
	<i>Pieces.</i>	<i>Pieces.</i>	<i>Pieces.</i>	<i>Pieces.</i>
January	21,755	3,876	1,455	9,318
February	48,715	2,780	35,528	1,740
March	68,241	25,086	55,405	9,290
April	68,355	34,725	32,635	12,785
May	64,793	73,187	22,892	13,049
June	71,290	119,927	63,690	41,611

From the foregoing table it will be seen that the trade increased as the chances for a war were thought by the natives to decrease, so that in the month of June of this year we had a shipment of 119,927 pieces, against 71,290 for the same month last year. The increase, however, in drills for June, 1880, was not so great, being only 41,611 pieces, against 65,690 last year. Yet, for the six months ending June 30 the shipments are in favor of last year, being 320,149 pieces of sheetings for 1879, against 259,531 for the present year; drills being 211,605 last, against 87,793 this. This falling off was influenced also to some extent, no doubt, by the advance in the cost of goods in the producing markets. Prices for some of the standard goods advanced in New York to 8½ cents per yard, equal to 3.20 taels to 3.25 taels per piece here; while such goods are now selling in this market for 2.85 taels per piece, showing a loss of no less than 40 candarins per piece, which, in addition to the causes already named, has aided in curtailing shipments from the United States. These shipments for the last six months of this year gave only 18,303 bales against 45,751 bales for the same period last year.

If peace is preserved, I have every reason to believe that this trade, which will represent this year about \$35,000,000, will be still greater next season, as the crops throughout China have been abundant, and in no part of the empire better than in some, if not all, of the recent famine districts. The growth of this, as well as all other imports, must largely depend upon the prosperity of the people.

Sized goods.—I have here to repeat the remarks made in previous reports, that about all of the Lancashire productions brought to this market are more or less sized (weighted with China clay), and do not pretend to contain that weight of cotton fiber which their denomination might lead one to suppose. On this subject there appears to be two opinions, radically different: First, it is claimed that there is a fraud upon the market, which, when once understood by the Chinese, will drive the adulterated goods from it. In support of this view of the case, our manufacturers have been advised separately to set their faces against sizing, and to adhere to the production of honest goods as being the surest way to compete successfully for this trade, since they can make a superior quality of goods at less cost than the English, while they cannot compete with them in the manufacture of the adulterated article. On the contrary, it is claimed that, so long as in the sizing process such combinations only are used as do not bring about a deterioration of the cloth, there is no deception whatever, and that the supply of this class of goods is based upon an honest demand for them, with a full knowledge on the part of both dealer and consumer that they are sized, as no one understands the sizing process better than the Chinese do. In view of this, and the further fact that the demand for this class of goods is far greater than for those free from adulteration, it is argued that there is here a legitimate market for cheap and inferior goods just as there is for the finer and heavier American fabrics. The Chinese dealers are always certain of an extensive sale of such low-priced goods, for they are within reach of the poorer classes, while the demand for the better and more expensive cloth is limited to those in better circumstances.

In this connection, I desire to refer to the case of *A. Provaud v. Langton and Riley*, tried at Westminster Hall in the court of the exchequer, before Lord Chief Justice Baron Kelly and a special jury. The plaintiff, Provaud, is in the China trade, with agents at Shanghai, an office in London, and one also at Manchester. In October, 1875, he was buying 8½ lb gray shirting from John Bury & Co., but desiring more than this company could supply, took the balance from the house of the defendants, which turned out to be so heavily sized as to render it unmerchantable. Hence the suit, the plaintiff recovering the full sum of damages claimed in his complaint. The trial lasted about two days, the report of which covers 260 pages closely written, in pamphlet form, and very interesting. I transmit herewith five copies of this report, which are intended for distribution; every manufacturer, in fact, should read it carefully, for the law governing such cases is not only clearly defined, but the question of sizing is examined and discussed from a scientific standpoint. I may mention that among eminent counsel who participated in the trial of this important cause was Judah P. Benjamin, esq., whose brilliant abilities once graced the American bar.

Gray shirtings.—Proceeding now to the different classes of plain cottons, I have to mention gray shirtings as the most important. The consumption of this staple has been 5,476,000 pieces against 5,069,000 pieces in the preceding year. Of this quantity Tientsin and Hankow draw the largest shares, viz, each port about 1,500,000 pieces. Japan requires about 500,000 pieces, and the remainder is distributed over the remaining ports. This fabric is made in different qualities, of which the so-called 8th, 7th, and 6th goods are those most in demand. The heavier kinds of 9th and 10th, which are very little sized and of good quality, are, of course, not consumed in such large quantities. Our so-called continentals (imported here under the denomination of sheeting) compete very favorably with the above heavy shirtings, and find more and

more favor with the Chinese. Their selling price ranges between 2.50 and 2.90 taels, and the demand during the end of May and June was so good that within three weeks about 35,000 pieces, at 2.75 and 2.80 taels per piece, were sold for immediate shipment to the consuming districts.

This branch of our trade promises well for a future development, and it is not likely that we shall lose the hold we have so far obtained on the market.

T cloth.—Next in importance comes T cloth, a cloth 24 yards in length and varying in width from 32 to 36 inches per piece. This texture is an imitation of the lowest class of home-made cloth, and therefore has to compete with the same class here.

Hankow and Tientsin again receive about 500,000 pieces each, annually, Chefoo and Newchwang about 150,000 to 200,000 pieces, and the remainder is distributed over the remaining places.

The United States has so far not made any attempt to obtain a share in the yearly consumption of 2,500,000 pieces of this class of cottons, and of course it is for our manufacturers to decide whether they intend to compete for a trade which, naturally, can only be done by turning out such cloth as is required.

White shirtings.—The consumption of this article has increased from 865,000 pieces in the preceding year to 1,070,000 pieces in this. Attempts have repeatedly been made from America to establish a regular trade in this class of goods, but, so far as I can learn, these have virtually failed. The chief reason is said to be that nearly all white shirtings destined for these markets are very heavily sized, a process with which our manufacturers are yet to become familiar.

American drills.—Although the import has fallen from 585,000 in 1878-'79 to only 310,000 in 1879-'80, the consumption has nevertheless increased from 390,000 to 421,000 pieces, while the English fabric shows a decrease of 130,000 pieces. These figures speak for themselves and prove that this branch of the trade is well established, and showing a gradual and steady development. The English fabric is about 1 tael less in value, being worth only 1.80 taels for a piece of 40 yards long and 30 inches wide.

American sheetings.—A heavy cloth, well adapted to the special requirements of the Chinese, and in which our trade shows a progress which should be considered satisfactory. The consumption has increased by 147,000 pieces, amounting to a total of 575,000 pieces against 428,000 pieces in the preceding year. Rates had an advancing tendency till they reached 3.15 taels, when they gradually receded to 2.85 taels in June, at which price very extensive sales, amounting to 119,927 pieces in that month, were effected as before.

The English fabric makes a poor show in comparison with ours, as far as this particular description of cotton goods is concerned. Nevertheless its consumption has also increased from 50,000 to 124,000 pieces, thus showing that there is also an increased demand for these fabrics, heavily sized as they are. The difference in price is about 0.75, i. e. 2.95 taels against 2.20 taels.

Jeans is the last in number of this class of goods wherein we are trying to compete with the English cloth, though evidently with but little success. Our jeans are clearly too expensive for the requirements of the Chinese, and for the special use for which this cloth is wanted they prefer the cheaper English manufacture.

The cotton mill at Shanghai referred to in my report from Tientsin is no nearer an established fact than it was then. The scheme was promoted by Taotai Peng, who obtained the special permission for this undertaking from the Viceroy Li Hang Chang. Another ex-Taotai, Tai,

joined the undertaking and furnished a capital of 20,000 taels to start with. The promoters then tried to float a public company, but as the management of the concern was to be wholly under Chinese control, they were unable to get any subscribers, as the Chinese have a general distrust of the undertaking. Meanwhile they had already acquired title to a suitable piece of ground on the Hwangpoo River, on the American concession, and the building of a large establishment appeared at the time (two years ago) to be taken in hand with vigor. They likewise concluded a contract with an English firm for the machinery, amounting to 250,000 taels. At present the matter is at a standstill. The machinery, although ordered, has not arrived, on account of want of funds, as it was stipulated that it should be paid by installments till the machinery ordered was paid for. The building operations, of course, have been suspended, and the foundations, which can now be seen above ground, are fast going to ruin. Whether the establishment of a cotton mill in this country would ever be a paying concern is very questionable, as I have heretofore remarked; for the cotton grown here is only suitable for very heavy coarse goods, and is very expensive, costing on the spot 50 per cent. more than the American cotton, even after being put on the Liverpool market. Under these and minor circumstances, the establishment of cotton mills in China need never seriously alarm our manufacturers.

Before closing my remarks on this the most important branch of our import trade, I desire again to refer to what I consider the most serious apprehensions put upon it by the Chinese in the shape of lekin and other illegal taxes, while on the road to the different markets in the interior. On account of the numerous tax barriers which their goods have to pass, the taxes become so great before they reach their destination that it amounts to almost a practical prohibition of trade with some portions of the interior. It would be infinitely better for all imports, if by doubling the import duty at the port of entry the goods could then be freed from taxation forever thereafter.

This would also double the imperial revenue from this source, as every cent collected by the maritime customs is returned to the government. In such a case the lucrative Taotai ships, at the different treaty ports, could be dispensed with, and the army of lesser officials, which also feeds in part upon the illegal exactions upon this trade, would be compelled to draw its support from other sources. Such a change, it seems to me, would do more to encourage the growth of foreign trade throughout the empire than anything else, besides being most desirable to the Chinese Government.

FANCY COTTONS.

The manufactures enumerated in the following table are known here under the above denomination, and their importation during the last three years have been as follows:

	1877.	1878.	1879.
Chintzes and furnitures.....pieces..	104, 107	129, 457	202, 193
Printed twills.....do.....	104, 106	193, 415	104, 376
Turkey reas.....do.....	03, 572	75, 913	267, 895
Velvets.....do.....	14, 389	21, 349	35, 591
Velveteens.....do.....	31, 427	82, 553	18, 963
Lawns and muslins.....do.....	534, 177	174, 826	143, 384
Handkerchiefs.....do.....	21, 302	37, 226	311, 264
Dyed shirtings.....do.....	5, 090		28, 248
Brocades and spotted shirtings, white.....do.....	41, 804	68, 749	60, 184
Brocades and spotted shirtings, dyed.....do.....	19, 285	15, 718	
Dyed brocades.....do.....			6, 390
Cotton lastings.....do.....			60, 385

From these figures it is easily conceivable how important this special trade has grown, and particularly what rapid strides some of the articles have made in 1879, when compared with the preceding years. Two descriptions, viz, printed twills and cotton lastings, have reached even such importance as to merit separate classifications, and will henceforth keep a prominent figure in the import of these classes of goods. The trade in them is generally a remunerative one, and a large proportion of it yearly is made on indents, thus securing a certain profit to the merchant.

Most of these manufactures are imitation patterns of silk goods as well as of Chinese printed cotton goods. They are well executed, and adapted to the peculiar Chinese taste, and new designs executed here are regularly sent home to the manufacturer to be adopted for fresh shipments. Many attempts to introduce patterns of European taste and color have utterly failed, and resulted nearly in a total loss to the enterprising importer.

Manchester and Glasgow exclusively, so far, almost monopolize this remunerative trade, as their manufacturers have succeeded through untiring study in hitting the particular taste and wants of the Chinese in that direction. The rapidly increasing consumption secures them a certain market, and is a never failing source of profit.

Whether this is a field for our manufacturers to enter upon and to compete successfully is a question they have to decide for themselves; but they have shown such wonderful success in other directions that, in my opinion, it is only necessary to direct their attention to it and to show them that this remunerative trade is open to their restless enterprise.

O. N. DENNY,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Shanghai, September 18, 1880.

THE CARRYING TRADE TO AND FROM CHINA.

REPORT BY CONSUL-GENERAL DENNY, OF SHANGHAI.

The following condensed statements, compiled from the statistical publications issued by the inspector-general of the imperial maritime customs, show:

1st. The movements of the shipping in foreign-built vessels, according to the different nationalities, carried on in the nineteen treaty ports of China during the last four years, 1876 to 1879.

2d. The carrying trade in foreign-built vessels from and to foreign countries, and between the treaty ports of China, and its value, for the year 1879.

To which I have added:

3d. A list of the rates of freight and passage-moneys charged to and from Shanghai by the different steamer lines employed in the coast trade of China.

I.—Shipping from and to foreign countries and between the treaty ports of China.

Flag.	1876.		1877.		1878.		1879.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
British	8,604	5,181,643	9,042	6,497,352	9,973	7,439,373	10,609	8,126,004
Chinese	3,063	1,404,885	6,032	3,974,544	6,869	4,377,357	6,932	4,353,696
German	1,587	661,668	1,376	496,908	1,983	743,457	1,907	721,046
American	3,547	2,410,421	1,446	556,112	1,018	341,942	931	270,632
French	228	170,749	107	163,389	174	100,073	164	154,995
Japanese	125	117,134	106	115,263	126	123,887	151	138,208
Spanish	276	72,212	308	53,464	453	74,172	316	46,419
Danish	202	64,610	117	36,733	150	91,726	197	42,407
Siamese	99	44,027	69	32,296	62	23,428	78	30,930
Dutch	52	26,471	63	20,247	54	28,617	72	16,658
Swedish and Nor- wegian	114	36,347	54	19,035	53	29,728	39	15,998
Russian	47	35,694	19	5,058	18	6,336	12	10,228
Belgian	2	580			2	4,544		
Austrian								
Costa Rican					2	1,704		
Total	17,946	10,226,421	18,807	11,983,591	20,928	13,446,394	21,409	13,927,221

II.—Carrying trade from and to foreign countries and between the treaty ports of China, 1879.

Flag.	Total tonnage, foreign and coast- wise, inward and outward.			Total value foreign and coast trade.	
	Entries and clearances.	Total ton- nage.	Tonnage employed.	Dollars.	Per cent.
British	10,609	8,126,004	58.35	379,648,000	59.33
Chinese	6,932	4,353,696	31.26	173,614,000	27.13
German	1,907	721,046	5.18	27,119,000	4.24
American	931	270,632	1.94	11,891,000	1.86
French	164	154,995	1.11	26,103,000	4.06
Japanese	157	138,208	0.99	9,853,000	1.54
Spanish	316	46,419	0.33	2,025,000	0.32
Danish	197	42,407	0.31	1,441,000	0.22
Dutch	72	16,658	0.12	467,000	0.07
Swedish and Norwegian	39	15,998	0.12	647,000	0.10
Russian	12	10,228	0.07	6,125,000	0.96
Siamese	78	30,930	0.22	948,000	0.15
Non-treaty					
Total	21,409	13,927,221	100	639,881,000	100

III.—Rates of freight and passage-moneys on the coast of China by steamers from Shanghai.

Destination.	Distance in miles.	Passage for Europeans on board.	Passage for Chinese on board.	Rates of freight per ton.
Chinkiang	156	\$14 00	\$1 00	\$3 00
Nanking	201	20 00	1 75	3 00
Wuhu	256	20 00	2 50	4 00
Kiukiang	451	23 00	5 00	5 50
Hankow	602	40 00	8 00	5 50
Tchang	892	80 00	14 00	10 00
Che Foo	571	27 00	8 00	5 50
Tien-Tsin	755	40 00	10 00	8 00
Newchwang	699	40 00	10 00	8 00
Foochow	440	40 00	8 00	4 00
Amoy	424	40 00	8 00	4 00
Swatow	650	40 00	8 00	4 00
Hong Kong	828	50 00	8 00	5 50
Canton	909	55 00	9 00	7 00
Ningpo	134	10 00	1 00	2 00
Nagasaki	459	20 00	10 00	4 00
Hiogo	848	38 00	15 00	7 00
Yokohama	1,190	55 00	20 00	8 00

The total tonnage of sailing and steam ships entered and cleared at the treaty ports of China in 1879 was larger than any previous year, amounting to 21,409 vessels, with 13,927,221 tons, against 20,928 vessels, with 13,446,394 tons, in the preceding year, thus showing an increase of 481 vessels, with a tonnage of 480,827 tons.

But with the exception of Great Britain, whose tonnage has increased by about 700,000 tons, all flags of other nations engaged in the carrying trade of China show a decrease, and amongst these the most noticeable is against our own, which since the transfer of the large fleet of the Shanghai Steam Navigation Company (1876 and 1877) to the Chinese had already been considerably reduced, so much so that our present show of but 271,000 tons represents only 1.94 per cent. of the total tonnage employed in these waters.

The English have, first of all, a two-weekly mail service carried on by the steamers of the Peninsular and Oriental Steamship Company, which run through from Shanghai to London on a schedule time of 40 days, and deliver their mail, via Brindisi, in 36 days, in London or *vice versa*. They further employ two more regular lines of steamers, the Glen and Holts, which have made a reputation for themselves, the former carrying this year's first teas from Yokohama, Hankow, and Foochow to London, making thereby together a gross freight of £65,000. Besides, there are irregular steamers chartered in London for outward freight, with the object of carrying back a shipment of tea from Shanghai, Hankow, or Foochow.

In the coast and river trade the English are running two powerful companies—the China Navigation Company Limited and the China Coast Steam Navigation Company—which are extending their lines year by year and adding continually to their fleets.

The Chinese tonnage is solely represented by the China Merchants' Steam Navigation Company, which company are now extending their operations to Honolulu, and (as I have heretofore reported to the Department), farther, to San Francisco.

The German flag has a regular line of steamers between Shanghai and Hamburg, and a coast line from Shanghai to Hong-Kong and Canton.

America has to-day not a single line, coastwise nor homeward, and is solely represented by sailing vessels plying coastwise and in the home trade.

The French flag is represented by the magnificent steamers of the "*Messageries Maritimes*," carrying on a two-weekly mail service between Shanghai and Marseilles, with a connecting line from Marseilles to London. This line is in great favor with shippers of silk, and nearly all passengers from and to the East travel by these splendid steamships.

Japan, by the Mitsu Bishi Steam Navigation Company's boats, monopolizes the trade between Shanghai and the Japan ports—steamers which formerly were flying the American flag.

The value of the carrying trade, as shown in Table II, is generally in proportion to the tonnage employed by each nationality, Great Britain taking the first place with about 60 per cent. of the total value of trade.

To form a correct idea of the extent of shipping employed on the China coast, and between the neighboring states, we have not alone to consider the 14,000,000 tons which represent the trade carried on in foreign-built vessels, as shown in the above table, but also the immense trade conducted in Chinese-built vessels. This amounts to not less than about 40,000,000 tons, and these vessels are busily employed all the year round in the trade between the thousands of small sea-ports, the larger sea-ports, and the river-side places not taking into account the

amount of tonnage employed in the fishing trade, which is also of considerable extent. But no reliable statistics exist whereupon to base a correct estimate of this enormous shipping trade by Chinese-built vessels.

Besides, we have to add the steam lines which are trading between Hong-Kong, the Philippines, Tonquin, Singapore, Saigon, Siam, Java, Japan, Liberia, Canton, Hainan, and Formosa, and of which no statistical figures are at my disposal.

We have further to take into consideration the fact that between all the above countries and the coast of China the trade is still capable of great expansion. Here is a field, it seems to me, open to our capitalists and our skilled navigators, who are so well acquainted with the coast, having been navigating it for the last twenty years.

It is most essential for the sound development of our commerce with China to establish a direct line of steamers from Shanghai, through the Suez Canal, to New York or Boston, and, on the other hand, from the Pacific coast to Shanghai, with subsidy for mail service, and at rates of freight which could compete with the direct lines to England.

By the line from New York to Shanghai and intermediate ports, also should be established a mail service with government subsidy, and only such steamers with such speed be employed as could perform the voyage within 42 days.

It is principally on account of the absence of direct steam communication with our Eastern States as well as our Pacific slope that our merchants and our commerce are placed at such a disadvantage compared with English, French, and Germans, who all have their direct steam lines connecting with their respective countries, enabling them by low rates of freight to ship even bulky and cheap articles of industry to these distant markets. The carriage from our Eastern States to the Pacific coast and thence by steamer to Japan and here is too expensive to allow even the shipment of cotton goods by this route; leaving out of the question other less valuable manufactures.

Our metals require lower rates of freight if they are to compete favorably with the English, French, and German products. Besides, it is necessary for our merchants to be able to supply the demands quickly, according to the wants of the market, and how is this possible if they have only to choose between sailing vessels, using 120 to 150 days to complete the passage, and the Pacific Railroad Company and connecting steamers, whose high rates of freight make them prohibitory and prevent business altogether.

A further aid to the development of our commerce in the East would be the establishment of a telegraph cable across the Pacific, via the Sandwich Islands, to Japan; at some future time this important enterprise will be an accomplished fact, and it is to be regretted that, from present indications, it will not be in the near future.

Undoubtedly a great many other articles of our industry would and could be directed to this country if an easy and safe communication, within a definite and short time, were a certainty and could at any time be available.

If a more liberal policy cannot be pursued in the future towards our shipping interests than in the past, we may soon see that the little ship-ping we have left will be swept away from the oceans, and our flag but rarely seen in the ports of the East.

O. N. DENNY,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Shanghai, September 30, 1880.

THE TEA TRADE OF FOO-CHOW FOR 1880.

REPORT BY CONSUL DE LANO.

I have the honor to report as follows upon the opening of the tea market at this port for the current year and the present aspect of the trade:

The quality known to our people as "black tea" is the chief and almost the only product exported from this port to foreign countries, and the annual opening of the market is always the absorbing topic of the time; and well it may be so, for it is upon this trade that the foreign merchant as well as the native tea merchant and tea broker relies for his moderate income or his fortune, as the case may be; it is from this trade that the provincial government contributes a very large proportion of its annual quota to the imperial exchequer, and upon this trade that some tens of thousands of the working class depend for the means of subsistence.

The probable date of the opening, the quantity and quality of the product, and the opening prices are each year exciting and absorbing topics for discussion and speculation for some weeks before the eventful day arrives. The usual date of opening is between the 1st and the end of May, but there has been nothing in the outlook of late to induce an early opening. The rush of a superabundance of low-grade teas upon the London and New York markets at the close of last season had the effect to create a *tea panic* in both markets in the early months of this year, and the news of this panic reached here just as the bulk of the first crop was arriving from the interior districts.

The last season having closed with a fair demand for common Congou, at prices affording a margin for profit to the producer and the native dealers, induced a too close picking of the first-crop leaf this season, and the result shows that the native merchants found themselves with an excessive stock of rather inferior leaf on their hands at an early date for opening, and at a cost ranging from three to five pence per pound above London and New York prices.

At the beginning of the present month there were upon the market about 470,000 chests, as against 380,000 chests at the same time last year; the native merchants were overweighted with financial burdens, and there was absolutely nothing to induce foreign merchants to buy. Added to this, there came heavy rains and a rise in the river, which threatened serious damage to the tea stored in native storehouses, the maturity of accommodation paper, rumors of a war with Russia, and the prospective blockading of the port; all things considered, the outlook was gloomy and the average Chinaman was not happy.

Up to the 12th instant tonnage in steamers had arrived to the amount of about 15,000 tons, and some 20,000 chests of "contract tea" had been taken for shipment; and a few venturesome natives, discrediting the foreigners' report of depression in the London market, and being pressed for funds, shipped off on private account some 15,000 chests more. On the 12th instant the market was formally opened, with a stock on hand amounting to, say, 430,000 chests, and up to the 19th instant settlements in open market had reached 93,500 chests, against 170,000 chests up to the same date last year.

The prices paid up to date show a loss of two to three pence per pound when compared with London quotations. The natives are not disposed

to meet the views of foreign buyers in point of prices, and the latter are not disposed to venture further than to fill specific orders at discretionary prices. The result is, there is stagnation and general depression in the trade of the port, the like of which I have never before seen during my residence of eleven years here.

The freshet has not been disastrous, and the *war news* seems less alarming, but this does not bring relief to the overstrained carriers of the first crop, while the second crop is already beginning to come in to add to an overstocked market.

Altogether, the season bids fair to be a most disastrous one for the native dealers, and the foreign buyer sees no margin for profits except in the possible event of war.

I may mention, as an additional cause for the excessive crop, that in former years some 50,000 chests of tea-dust were purchased by Russian dealers, for manufacture into "brick tea" and shipment north to Siberia, and this dust has not appeared in the market reports of arrivals or shipments, whereas all Russian orders for dust were canceled a month ago; hence it (the dust) is mixed with the leaf and goes to swell the quantity and deteriorate the quality.

It is a sad comment upon the trade of this port that in the last ten years there have been only two seasons which have given a margin for profit to the American or European merchants engaged in the tea trade, while native dealers have been steadily sinking under financial embarrassments. This state of things is attributable mainly to the increase in the product in China and other tea-producing countries and the fact that the supply largely exceeds the demand.

The crop of Oolong designed for the American markets is said to be small, and superior in quality to that of the last few years.

M. M. DE LANO,
Consul.

UNITED STATES CONSULATE,
Foo-Chow, June 23, 1880.

LABOR IN JAPAN.*

REPORT BY CONSUL-GENERAL VAN BUREN, ON THE TOPOGRAPHY, SOIL, CLIMATE, LAWS, RELIGION, GOVERNMENT, EDUCATION, THE PRICES OF LABOR, LIVING, &c., OF JAPAN.

In all historic times the subject of labor and the condition of the laborer have been of the first importance. In later ages, since trade and commerce have multiplied, population increased, wealth and accumulated capital in a few hands, the question has been complicated by that of the relations which should exist between capital and labor, and now that steam and electricity are bringing all nationalities and races into close and active competition, the subject has received added importance.

In all the countries of the civilized world this topic is agitating the public mind, and is being discussed in the halls of legislation, in the busy marts of trade, on the great money changes, in the homes of the artisans, and in the huts and hovels of the humblest toilers. All systems of government and all organizations of society on every continent

*Consul-General Van Buren acknowledges the valuable assistance of Dr. H. Latham, formerly vice-consul-general at Shanghai, in the preparation of this report.

and on the far-off islands of the ocean are disturbed by this question and its portending conflict.

In view of this a full, accurate, and comprehensive account of the condition of the laborers of any race or country is of more than passing importance. The following statement of the status of labor in a new and comparatively unknown land cannot fail, therefore, to be of interest.

It is now nearly a quarter of a century since Perry opened the sealed gateways of Japan to the commerce and travel of the world. The unique civilization of an island empire, with an area of 150,000 square miles and more than 35,000,000 of people, was then first presented to modern times for study and investigation. Since that time libraries of books and pamphlets and volumes of letters have been written upon every phase of that civilization, except the status and condition of the laborer. Of the importance and power of 35,000,000 of people as added factors in the products of the world there can be no question.

In this paper I shall refer briefly to all facts that seem to me to affect to any appreciable extent the condition of the laboring population of Japan, believing that such information will be found valuable to the economist, statesman, or philanthropist who shall make the happiness of mankind his study. The topography, soil, climate, laws, religion, government, education, morals, finances, and means of transportation, as well as the prices of labor and living, all have an influence, directly or indirectly, upon the condition of the laborer, and are all, therefore, legitimate subjects of study in this connection.

LATITUDE AND LONGITUDE OF JAPAN.

The islands of Japan extend along the eastern coast of Asia, from the 31st to the 46th parallels of north latitude, and from the 130th to the 145th degrees of east longitude. It is estimated that these islands contain from 150,000 to 160,000 square miles, or once and a half the area of the British Isles.

TOPOGRAPHY.

Through the center of this island chain is one long mountain range, with spurs of lesser elevation running at right angles. Interspersed through all these mountain masses are innumerable fertile valleys, through which the drainage of the whole area finds its way to the sea. Along either coast are extensive alluvial plains, the weatherings and washings of the mountains during untold centuries. The crests of the higher mountains are rocky and precipitous, but as the spurs slope away toward the sea they present gentler hill-sides susceptible of tillage. It is on these alluvial plains along the sea, through these fertile valleys and on the gentle mountain slopes, that the laborer is to be found. Both the eastern and western coasts present deep indentations of gulfs and bays extending far into the mainland.

SOIL.

For all the purposes of this paper, it is sufficient to say that the soil, with which the laborer of Japan has to deal, is a black, vegetable mold, from 2 to 10 feet in depth, superimposed upon a deep clay subsoil. This mold is a mass of decomposed vegetation, grown luxuriantly in a warm summer climate, combined with a great rainfall. It is a true humus, with an excess of humic acid, which renders its fertile elements

more or less insoluble. Even in its virgin state this black, rich-looking soil, without some chemical solvent will not produce a paying crop, but with lime or potash every product of the latitude grows luxuriantly.

WATER.

Draining the great mountain range and its spurs is a system of rivers and canals, furnishing abundance of clear, pure water. Excellent wells can be had almost everywhere on the lower levels for the digging.

CLIMATE.

I shall not attempt to give the full meteorology of this country, as the temperature and rainfall will be sufficient for our purposes.

Temperature.—In Yokohama, in latitude 35° 46' observations have been made for nine years. The following are the monthly and annual means of temperature.

	Fahr.
January	39.2
February	42.2
March	46.0
April	54.7
May	64.6
June	71.6
July	78.7
August	79.4
September	70.2
October	59.8
November	49.5
December	47.5
Annual mean	57.7

The highest temperature for these nine years was 93°, and the lowest, 21°. The absolute range of mercury was, therefore, 72°

Rainfall.—The average precipitation, as observed at the same place and about the same time, was as follows:

	Inches.
January	4.23
February	4.22
March	3.19
April	5.84
May	4.33
June	10.17
July	3.15
August	6.62
September	12.06
October	6.14
November	8.67
December	2.56
Annual rainfall	71.17

The greatest amount of snow which has fallen at Yokohama for one year is 15 inches. The highest annual precipitation since foreign trade with this country was in 1863, being 122 inches, and the smallest amount in 1867, being 42 inches.

The following table shows the average number of rainy days for each month in the year:

January	4.42
February	6.28
March	8.42
April	9.72

May	8.42
June	11.28
July	10.00
August	9.28
September	11.85
October	7.00
November	6.57
December	4.28
Average rainy days per year	97.52

POPULATION.

The population of Japan, as shown by the census of 1878, is between 35,000,000 and 36,000,000, but as full tables of that census are not as yet available, I have been compelled to resort to those of the census of two years earlier. The population at that time was 33,300,675.

Number of the higher and lower nobility	1,894,784
Common people	31,405,891
Number of males of whole population	16,891,729
Number of females of whole population	16,408,946
Number of farmers, males	8,004,014
Number of farmers, females	6,866,412
	14,870,426
Number of mechanics, males	521,295
Number of mechanics, females	180,121
	701,416
Number of merchants, males	819,782
Number of merchants, females	489,409
	1,309,191
Mixed occupations, males	1,218,266
Mixed occupations, females	911,256
	2,129,522
Total producing population	19,010,555
Of children under fourteen years of age there were	9,056,309

GOVERNMENT.

The Government of Japan up to 1868 was absolute and irresponsible, with an Emperor at its head, who held all authority by divine right, and who ruled through a number of feudal princes, at whose head stood the Shogun (Tycoon).

The laborer had no privileges, except such as his immediate prince conceded. He was absolutely under the control and in the power of his feudal lord, and that lord's retainers.

There were no courts for the trial of causes which might arise between him and his superiors. The position of the laborer was so immeasurably below that of the ruling class that it was as much as his life and liberty were worth to even petition his prince or appeal to the Shogun or Emperor against any act of the upper classes. The common people were bound to the soil, and could not leave it without permission. Their lives even were in the hands of their immediate superiors, and fancied insolence or insubordination was sufficient justification for taking them. The government divided the people into five general classes, as follows:

1. Military and official: this class included the Emperor and his blue-blooded nobility, the Tycoon and the Daimios, and their retainers.
2. Farmers who held land under lease.
3. Artisans.
4. Merchants and bankers.
5. Laborers, or the cooly class.

There was the widest gulf between the first class and all the others. The latter had no rights which the first class were bound to respect.

In 1868 the government was essentially remodeled. The feudal system was abolished; the feudal lords were pensioned, and their power taken from them and assumed by the central government.

Although the laborer had no voice in the making and execution of the laws he has been materially benefited by the change. A system of courts has been established, wherein he can be heard against even the highest classes. He can claim the intervention of these courts to insure the payment of his wages, which he could not do under the old organization.

A vast, burdensome system of men-at-arms, with absolute authority, has been set aside, the old division of the people abolished, and all, in the eyes of the law, made of the same class. Of course, the power and influence of the old class system is still felt, and will be for years; but it must gradually die out, and thus the laborer will be on equal ground with all. One peculiar feature of the old absolutism, however, still exists. I refer to the police surveillance of all the people. The empire is divided into districts, called *ken* and *fu*, over each of which is placed an officer, known as the "*ken-rei*," or "*fuchiji*," rendered in English, "*governor*." At the office of this official every native resident must be registered, and he or she cannot remove to another *ken* without writ, ten permission first obtained; and upon arrival at destination, he or she must be immediately registered there. And so strict is this supervision that a Japanese cannot travel, or even sleep, out of his district without permission of the authorities. A block of every ten houses has its supervising officer, and each hundred a superior official, keeping watch and ward over the movements of the occupants, so that any change or movement, even for a day, is immediately known. And this interference by the government is not confined to the movements of the people, but extends to all their trades and industries. Monopolies are granted to certain parties, either of trade or transportation, and the government itself often becomes a purchaser and seller in the market.

LAND TENURE.

All the land of the empire was the Emperor's. Through the Shogun (Tycoon) it was granted to the military favorites for the maintenance of the military power. These favorites leased it in small divisions to farmers, who held it at the pleasure of the lessors. So long as the lessee paid the stipulated price, in produce, he was left undisturbed. Such was the land tenure up to 1868. Since that time the feudal institutions have been abolished, the land tenure has been changed, and the land has been sold, and is held in fee-simple. This great reform has infinitely bettered the condition of the farmer. About three-tenths of all tilled land is now in the possession of small proprietors, the balance being held in larger divisions.

ORGANIZATION OF DOMESTIC SOCIETY.

Society was here, as elsewhere in Asia, essentially patriarchal. The pater familias had almost unlimited control over all the members of the family. The whole course of life of a child was marked out, shaped, and controlled by the father. Marriages were entirely within his authority. No son or daughter, no matter of what age, could leave the paternal roof and go out into the world without the parental consent. Among

the lower classes, daughters were sold by their parents to be concubines, or to be trained as singing or dancing girls, or for immoral purposes, or they were mortgaged for a term of years to labor.

When a girl left the house of her parents and entered another as a wife or concubine, all the allegiance due to her parents was transferred to her husband or master and his parents. She could be divorced and sent away from her children at the will of the husband and his family.

Much of this power of the *pater familias* has been done away with, but his authority is still incomparably greater than in any Western society.

RELIGION.

The religion of the imperial families is Shintoism, or the worship of the country or empire through its heroes or great men. That of the great mass of people is Buddhism; not that of India, but a system grafted upon the original Pagan worship, and retaining much of the gross superstitions of the latter.

The common people not only believe in the Buddhistic deities, but also in the demons and evil spirits of Paganism. These religious beliefs and superstitions affect directly the condition of the laboring classes. The belief in *shrine cure* prevails everywhere with them. The result is a large number of blind and diseased persons, who, if they had been properly medicated in time, would be healthy producers instead of burdens upon society. Large numbers of children, when sick, are carried to the favorite shrine instead of to the doctor, and thus mortality and the number of physically weak and diseased people is largely increased.

The priesthood, although less than formerly, is still a mighty power with the lower classes, and the income of shrines and temples, although materially reduced, is still immense, and a most oppressive burden to the people.

EDUCATION.

The education of the higher classes was in former times Chinese. The literature, philosophy, and science (if it can be said that there was any true science) were all Chinese. It is safe to say that among these higher classes there was no illiteracy; all could read and write. Nearly all of the other classes, although not learned, could also read and write enough for their business purposes. There were, of course, exceptions, but of the male farmers and artisans not ten per cent. were illiterate. Schools were to be found in the larger towns of the provinces and in many of the smaller villages. Where schools were not available, reading and writing were, in some measure, taught in the household.

It must be understood that what is denominated as education here is not education in the sense the term is used in Europe and America, and especially in recent times. The most highly educated man in Japan knew some thousands of Chinese characters, a few books of the Chinese classics, the books of ceremonies, and some of the truisms and proverbs of the Chinese sages, and could write impromptu poetry in Chinese characters. He need not know the history even of his own country, much less that of any other. He had absolutely no knowledge of anything worthy of the name of science. In art, he might paint and draw.

The lower classes, in place of this Chinese culture, knew just enough arithmetic to serve their daily use, and could read and write in the Japanese characters. There was some knowledge of Japanese history, mixed up with the marvelous, gleaned from books or the traveling

story-teller, who, by the roadside, recited to gaping crowds the stories of the wars and amours of the olden times.

The whole system of education has been remodeled since 1868. Public schools have been established and scientific text-books from Europe and America have been translated and brought into use. Probably the percentage of illiteracy has not been much reduced by these reforms, but the scientific learning of the West has largely taken the place of the useless proverbs and superstitions of the East. It is safe to say that, at the present rate of educational progress, another decade will see a useful education within reach of every Japanese laborer.

The report of the minister of education for the year 1879 shows:

Number of elementary schools	25, 459
Number of teachers	59, 825
School population	5, 251, 807
Scholars	2, 066, 566

The per cent. of scholars to school population, therefore, seems to be about 39.3. There are 389 schools of a higher grade, with 910 teachers and 20,522 scholars. There are 96 normal schools, with 766 teachers and 7,949 scholars. There exist also two so-called universities.

The whole amount of school expenditure, as shown in said report, was 5,364,870 yen,* of which 2,640,629 yen were paid in salaries, the salary of each teacher being an average of 44.72 yen per year.

Public libraries have been opened, one of which, at Tokio, has about 70,000 volumes.

Medical science and education.—The health and welfare of the laborer and his family, everywhere, are largely affected by the system of medicine prevailing and by the intelligence of the members of the profession. An intelligent system of medicine, a high standard of admission to its practice, with low fees, give a lower percentage of mortality, a higher physique, and fewer lame, blind, and deaf.

The first system of medicine that, in any degree, took the place of *shrine cure*, was the Chinese, which had no claims to be a science, and was full of ignorance, superstitions, and absurdities. The system had no knowledge of anatomy, physiology, pathology, chemistry, or the properties or actions of medicines. This was, and is, the old school of medicine in Japan. Upon it was built a new system by the introduction of Dutch medical text-books, in the seventeen thcentury, which struggled for supremacy with the Chinese school for two hundred years.

Although this was an improvement upon the old practice, the latter continued to embrace the most numerous followers and to receive the confidence of the laboring classes whenever they emancipated themselves from the superstitions of the shrine cures of the priesthood.

When the country was opened to foreign intercourse, modern medicine was introduced. Within the past ten years a medical college has been established in Tokio, and all the local or ken governments have opened hospitals, with a foreign surgeon for each and a class of medical students.

These local schools were necessarily inefficient, as no one man is fitted, or has the time, to teach all the branches of medicine and surgery, but, with the text-books and the clinics of the hospital, a better class of practitioners than the country has ever had before has been sent out. I know of no means of arriving at the number of practitioners of these several schools in the whole empire.

In this ken or province of Kanagawa, in which this consulate-general at Yokohama is situated, there are 659 practicing physicians; of these,

*The Japanese yen = \$0.997.

41 are students of the new schools and hospitals, 106 of the old Dutch school, and 512 of the Chinese school.

The population of this ken is now (1880) about 500,000. This gives one physician to 760 people. It must be borne in mind that this ken contains the principal foreign port and has had a hospital for years, with a foreign surgeon, and is within 20 miles of the medical college in Tokio. In the interior, I do not think there is more than one physician to every 1,500 people, and the old, ignorant Chinese method preponderates more largely than here.

MORALS.

It is difficult to write of the morals of the Japanese people in such manner as to make the subject entirely intelligible to the Western reader. The habits and customs of centuries, in which the relations of the sexes in this country have been looked upon so differently to those to which we have been accustomed, have created a code of morals, if the term be permissible, from which morality, in this connection, has been excluded. The relation of master and concubine is here considered perfectly proper, and neither party loses caste or respectability.

As mothers, Japanese women are models. None can be kinder or more affectionate to their children than they. They will spare no pains to amuse or instruct them, and seldom use force to compel obedience or punish faults. As wives, these women are simply slaves to the humors and caprices of their husbands and the families of their husbands. They have absolutely no rights, and are often subjected to seeing the attentions of their lords transferred to some favorite concubine, to whom they are obliged to be considerate and respectful.

Bathing together, by both sexes, in public bath-houses, in a state of nudity, is practiced everywhere, but rudeness, vulgar language, or indecent gestures, in these places, are never indulged in.

As has been seen in the statistics of population, the males in Japan greatly exceed in number the females, and, in consequence of this fact, and the additional one of concubinage, so largely practiced, the number of unmarried men among the laboring class is very large. These persons frequent houses of prostitution, and spend much of their earnings also in gambling and drinking. It must be said, however, that drunkenness is exceptional, especially among the better class of laborers.

The strong drink is "sake," a distilled spirit made mostly from rice, of about the strength of ordinary table sherry.

The Japanese, like all Eastern peoples, are somewhat given to exaggeration in their speech, and their intense suavity and politeness to each other is proverbial.

MEANS OF TRANSPORTATION.

The islands of Japan are long and narrow. There is no point in the center of the larger islands more than 100 miles from navigable water. Cheap ocean transportation is, therefore, everywhere easily available. On the alluvial plains of the eastern and western coasts, besides the tidal rivers, there exists an extensive system of canals. In the interior, in former times, there was no general system of roads worthy of the name. It is true, the Tokugawa Tycoons, and some of the Daimios had built a few roads, but they were illy adapted to carriage traffic, and, in places, were entirely impassable except for footmen and pack-horses. Aside from these roads, built for war purposes, the only means of travel were mere footpaths.

Now two short lines of railway have been built, in all less than 100 miles. Some of the footpaths have been made wide enough for carriages, but, in the whole of Japan, it is safe to say that there are not more than 1,000 miles of carriage roads. From and to the interior districts, all the products and all articles of trade are carried on the backs of men or horses. Such carriage is slow and costly and ruinous to both producer and consumer. As a tax, it bears heavily on the shoulders of labor, and will do so until better roads are built by the government. So much man-packing is not only laborious, but degrading. It prevents production, consumption, and trade.

The building of good roads and the providing of cheap transportation must be a condition precedent to the settlement and development of the wild lands of the country.

By sea, river, and canal the means of transportation are reasonably good and cheap. Lines of steamers and sailing vessels, of foreign construction, have been established to all the principal ports of the country. The fleet of vessels owned by one company, the Mitsui-Bishi, represents, in round numbers, a gross tonnage of 50,000 tons. This company has had the countenance and support of the government; its fleet is being constantly increased and the service rendered more effective.

In addition, there are many smaller companies in Tokio, Osaka, and Nagasaki, which run steamers and sailing vessels, of foreign style, to some of the smaller ports. Some of these smaller steamers are Japanese built, and, although not of the best construction, give promise that in time Japan will be independent of foreign countries in ship-building.

There are no means available for giving accurate data as to the number and tonnage of the old style of native sailing vessels, known as "junks." The gross tonnage must be very large. They run along the coast to and from all the ports, and give cheap service, much cheaper than steam or foreign sailing vessels.

Latterly, loud complaints have been made of the interference by the government with these vessels in the interests of the steam monopolies. Experience will certainly compel an abandonment of such attempts, which, if persisted in, must disastrously affect both the government and people.

As bearing upon the question of inland transportation of the products of labor, the statistics of the number of cattle and horses of both Japan and the United States may be properly inserted here, so that the contrast may be seen.

In Japan, her 35,000,000 people have 900,274 horses and 814,324 cattle. In the United States, in 1870, the 38,000,000 people had, in round numbers, 10,000,000 horses and mules, and 26,000,000 cattle. This will show what burdens the laborer here has to carry on his back, and what unnecessary calls are made upon his earnings in the way of carrying his products.

Mails.—The mail transportation that has been established within the last ten years, both coastwise and inland, is cheap and excellent. The number of miles of mail routes aggregates 36,052. The number of post-offices is 3,927. The number of letters carried for the year ending June 30, 1889, was 55,775,206, and that of newspapers 11,203,731. These figures throw great light upon the volume of business of the country and the amount of reading and writing done by the people.

Connected with the postal department is a well organized postal money-order service and postal savings-bank system. The number of these banks is 595.

TENEMENTS.

In forming an opinion of the tenements of the laborer, the climate of the country must be borne in mind. Although there are unlimited quantities of good, durable building-stone everywhere in the mountain ranges, and vast deposits of firm clay for making brick, no stone or brick houses are built. The frequency and severity of earthquakes make the use of any but wooden structures impracticable. Timber is scarce, and there is nothing worthy the name of forests except in a portion of Yesso, in the far north.

All buildings, or nearly all, are one story, and compared to those of America and Europe, small. But the reader must bear in mind that the requirements of this oriental civilization are less than with us. A laborer's house here will, at most, have no more than four little rooms. Generally there is one main room, which serves as a sitting, dining, and sleeping room, and, in addition, a small nook for cooking and another for bathing. That the uses of one room for the purposes of eating, sitting, and sleeping, may be understood, it should be explained that the rooms are covered with clean soft mats, upon which no boot or shoe ever treads. When meals are served, small tables, not more than one foot high, are used, and the family sit on the floor like tailors on their benches. When the meal is finished the table is removed and the room is ready for a sitting-room, the mats serving as seats. At night cotton comforters are brought from a small clothes-press and spread on the mats, and lo! a sleeping-chamber. Thus, much of the room required by a laborer our Western civilization is saved. A Japanese laborer's house with three rooms can be built for from 25 to 200 yen. And the furniture, including matting and sliding partitions, will not exceed 50 yen.

The house, by reason of non-use by the people of boots and shoes, is neat and clean. The bath, found in almost every laborer's house, is in daily use, and, cheap and small as the house is, it is comfortable.

None of the houses are built with a view to ventilation or warmth, the partitions and sides being of paper, protected in cold weather or storms by strong wooden shutters. The vast majority of the houses are thatched, and therefore stove-pipes and chimneys are impossible. In fact, there are no stoves or grates in Japan. In villages and towns the house is warmed, if at all, by a small fire-box filled with charcoal, but more generally by a square zinc or copper lined fire place, sunk in the middle of the floor, in which wood is burned, the smoke from which rises and escapes through a hole in the roof. But little heat is generated in this way, and much discomfort from the smoke is experienced, and diseases of the eye are prevalent.

As a rule, the principal protection from cold is by additional padded clothing. The laborer, however, suffers in the three winter months, when, although in many parts of the empire the thermometer does not mark very low, the cold storms of snow and rain are exceedingly uncomfortable.

The drainage from sinks and cess-pools in the vicinity of tenements is, as a rule, extremely defective, and is, doubtless, a powerful agent in producing epidemic diseases.

In 1875, when the population was 33,300,675, there were 7,389,371 houses or tenements, the average number of occupants to each being, therefore, less than 5. In Tokio the number is 4; in Kanagawa ken, 4.5; Nagasaki ken, 4.7; Fukushima ken, 5.5; Miyaga ken, 5.9; Awamori ken, 5.8; Osaka City, 3.7.

The houses of cities seem to be less crowded than those of the poorer rural districts.

FUEL.

The fuel, which is used chiefly for cooking and heating baths, is charcoal, cut and split wood, brush, and dried grass.

Charcoal is made in the wooded regions, burned in small clay pits, and carried to the settlements on the backs of men and horses in straw sacks. The selling price varies according to the distance from which it is brought, from 25 to 50 cents per 100 pounds. Cut wood is sold in small bundles of six sticks, each stick being about 18 inches in length and 2 inches in diameter; 80 to 100 bundles are sold for \$1. I am quoting the rates of districts remote from foreign settlements.

Brush and dried grass are gathered from the wild lands, to which certain rights of commons attach, as in England in early times. The value of the fuel bought and sold in 1875 was as follows: Wood, \$6,107,974; charcoal, \$2,219,986.

As the farmer and country laborer gets his fuel from his own land or from the commons, this must have been mostly used in the larger villages and cities, showing how little is consumed for house-warming even by the richer classes.

FARMERS.

As has been said, the farmer, under the old system of classes, ranked next to the samurai, or governing class. In the new order he holds the same position in public opinion and general estimation. He is now owner of the soil he tills, and is taxed according to its producing capacity.

The kocho, or village officer, in all agricultural villages, has always been a leading farmer, and some villages had and still have the right to choose this officer. He had little more than a general supervision of village affairs. He settled petty disputes, maintained the peace, kept the register of the inhabitants, granted traveling permits, arrested thieves, and was a general adviser for the village.

Within the past two years the government has taken a step which has greatly enhanced the position and influence of the landholder. A decree has been promulgated by which local election assemblies have been created, the electors of which are confined to such of the landholders as pay at least \$10 land tax.

At present the power of these assemblies is only deliberative and advisory. The governor of the province submits his fiscal estimates for local expenditures, and they examine and pass upon them. If they disagree with him the whole matter goes to the general government for its decision.

Although these assemblies possess no legislative power, they contain the germ of representative local self-government. The system needs to be extended so as to include, among the representatives, intelligent people of all classes, and to have the powers now exercised materially increased. That this consummation will be achieved is almost certain. Nor will reform in this direction stop here.

The agitation pervading all classes in Japan in favor of a national representative assembly is manifested daily in petitions to the Emperor and his ministers, in conferences and lectures, and in newspaper communications and editorials. The question is so prominent and the determination to achieve success so universal, that the genro-in, the deliberative and advisory council of the Empire, is now said to be taking it into serious consideration, and probably the country, before the lapse of many years, possibly months, will find itself in possession of some such chamber,

wherein the views of all the people may be presented and discussed, and laws for their welfare enacted. That it will be entirely free to act as its members may be inclined is not probable, and it may be matter of doubt if such freedom would at present be wise.

Farmers in Japan have no seasons of rest as in colder climates, the climate in nearly all portions of the country being so mild in winter as to admit of raising the hardier crops.

A considerable percentage of the landowners are not workers, large numbers of the tea, silk, rice, tobacco, and sugar raisers being able to employ laborers for that purpose.

Almost every farmer can read, write, and keep his farm accounts. He sends his sons to some school to learn the same, and has his daughters taught music and needle-work at home.

All labor on a farm is, to the present time, mere hand-work. A plow is seldom seen. Sometimes in the lowland rice-fields an implement 5 feet in length with a wooden cross-piece and depending iron teeth 20 inches in length, set 4 or 5 inches apart, is used with a horse as a pulverizer of the soil, after the latter has been thoroughly dug up and worked over with a mattock. Ninety-nine per cent., however, of all labor is still manual. In 1878 the number of farmers, out of a population of 35,000,000, was something over 15,500,000, of which over 7,000,000 were women; but as a large number of these latter, including the old and young, are engaged in household duties, spinning, weaving, making clothing, &c., there were probably not more than two or three millions women employed in field work.

The area of land in actual cultivation in the whole empire in 1875 was about 12,000,000 acres, so that to the actual farming population there were only three-quarters of an acre per head. The tillage is of the most thorough order. Two crops are invariably raised each year, so that the producing capacity of the area cultivated is double that of the number of acres named.

The wages of an able-bodied farm-hand are about \$35 per year with board, and without board, \$50. Per day, with board, it will not average more than 15 to 20 cents. Female labor is much cheaper. To do work in a house or on a farm, stout healthy women are engaged at from \$8 to \$10 per year with food, and without food from \$25 to \$30, and by the day at from 10 to 15 cents. The number of hours of labor will not average more than 9, and probably not more than 8.

The Japanese farmer is an easy task-master, and treats his hired laborer with great kindness. In ordinary farming there is little skilled labor, but in tea, silk, and sugar cultivation and preparation, skill and experience are required, and are paid higher prices. A good tea-frer on a tea plantation, or a silk-winder, receives double the wages of the unskilled laborer.

Food.—The food of a farm-laborer is almost entirely vegetable. It consists of rice, barley, or wheat, millet, beans, pease, turnips, potatoes, onions, carrots, and a few other vegetable products. In some districts rice is too high in price, and only barley, turnips, and millet, with some few additions, are used. On rare occasions the laborer may eat an egg or chicken and some cheap fish, but he is essentially a vegetarian. Religion, custom, popular prejudice, and price forbid the use of animal flesh.

Clothing.—The clothing of the farm-laborer in summer is little more than nature sent him into the world with; in winter, a cotton garment or two is worn, with straw sandals or wooden clogs. The whole clothing of a year will not cost more than \$4 or \$5.

Holidays.—Several holidays are allowed each year, such as religious festivals and family celebrations. When a man and his wife work for yearly wages they will receive, without board, about \$75. From this he has to pay from \$8 to \$10 for a two or three small-roomed house, and buy clothing for a family of four or five, amounting, perhaps, to \$20. He will have a small garden with his house, from which one-half of his living is produced; a few chickens and ducks, tended by the children, will buy many articles of necessity or of ornament for holiday use; a child of six or seven years, perhaps with a babe of six months strapped on its back, will gather brush or dried grass on the commons for fuel; and by great frugality in eating, and scrupulous care of clothing, at the end of a year he finds he has supported his family, had several enjoyable holidays, and has a few dollars hidden away in some secret place.

*Taxes.**—The average government tax of low irrigable rice-land is \$5 per acre. The average value of such lands is \$200 per acre. The land tax is therefore $2\frac{1}{2}$ per cent.; this is the government assessment; that for local purposes is $\frac{1}{2}$ per cent., making 3 per cent. in all.

Rice culture.—The average value of the product of rice-land is about \$40 per acre. Four or five acres of lowland rice-fields form quite a respectable holding for one person. This, with another acre or so of upland where vegetables are raised, and a little bluff land for timber, fuel, and grass to feed the pack-horse, supports his family, pays for hired help, and gives a little surplus at the annual settling day.

The homes of the rice, silk, and tea farmers are the best of all the agricultural laborers in Japan. The house is often as large as 30 or 40 feet square, universally one story, thatched roof, strongly built, with veranda in front, and five or six rooms, one being kept as a spare or reception room. If built with a view to light and warmth, they would compare in comfort with the average New England farm-house.

Rice is grown in all of the sixty provinces of Japan. The whole area in cultivation in 1878 was about 6,500,000 acres, and the product was 180,000,000 bushels. This includes upland as well as lowland rice, the average yield of all being about 30 bushels per acre. On low land the yield will average 40 bushels.

The total value of the rice product, as returned to the home department in 1878, was \$202,521,750.

Wheat.—Wheat is grown in all parts of the empire. The product in 1878 was 38,000,000 bushels, valued at \$19,000,000.

Barley.—The climate and soil are everywhere favorable to the growth of barley. The product in 1878 was 60,000,000 bushels, valued at \$36,000,000.

Millet, Beans, Pease, &c.—The value of these products for the same year was returned as \$16,007,360.

The value of all other vegetables was \$10,849,623, and of seeds and fruits, \$8,217,798.

Tobacco.—The product of tobacco was about 90,000,000 pounds, valued at \$7,500,000. A considerable quantity was exported to England and Germany. The quality is inferior and the price low, but much higher than ten years ago, averaging about $8\frac{1}{2}$ cents per pound.

Tea.—The tea culture is one of the most important and lucrative of all Japanese industries, the leaf being one of the chief articles of export. The product in 1878 was about 60,000,000 pounds. The export trade has increased wonderfully. In 1869 the amount exported was 4,890,430 pounds; in 1875, 22,384,893 pounds; in 1879, 33,692,391 pounds; and that of 1880 is estimated to reach 38,000,000 pounds.

* As to general taxation, see Table B, Appendix.

As has been remarked, the tea farmer lives in a comparatively good house, has servants, keeps a horse to do his packing, and has a balance to his credit at the end of a good year.

The best tea grows on the hillside, sheltered from the sea-winds, which latter make the leaf tough and of bad flavor.

The ordinary labor wages are paid for the tillage of the soil, but the man who trims the plant must be skilled, and will get as high as 30 to 35 cents per day. The tea-picking is done by women and girls and requires care. When they work by the day they get from 10 to 12½ cents. Tea rollers and firers in the country must be skilled, and they command from 15 to 30 cents per day. In the open ports tea-firing is done entirely by women, who are paid about 15 cents per day.

In the export of tea there is employment for a large number of carpenters in making boxes, printers and lithographers in the manufacture of labels, &c., who are paid as skilled mechanics.

The area of tea-growing is rapidly increasing, and as there are plenty of hillsides and planes well adapted for the culture available, and still unoccupied, it will increase as long as there is a foreign demand. It seems to be one of the great fields for the spread and use of an increasing labor population. The habit of adulterating tea, however, with leaves of the wisteria plant seems to be on the increase in this country, and if not arrested may materially affect the demand. The wisteria leaf is not poisonous, but cannot be said to improve the flavor of the cup that "cheers, but not inebriates."

Silk.—The area of land in mulberry trees is not stated in any of the late census product returns. In 1875 the total value of silk product is given at \$31,250,000. The export of silk and silk-worm eggs for the year ending June 30, 1878, was \$11,640,976.64.

The trade is steadily growing and giving increased employment to labor, and, as better processes of preparing silk are introduced and a better article is produced, more and more skilled labor will be required and higher wages be paid.

Mulberry plantations are found in fifty of the sixty-six provinces of Japan. The soil nowhere is exclusively devoted to this tree. Universally between the rows of trees, other crops, both summer and winter, are grown. The business of silk production is carried on in the house where the family lives. The mulberry leaves are either picked off by women and children and carried into the house, or the young limbs with the leaves on are cut off and taken there, where the leaves are picked off, washed, cut up, and fed to the worms. Little skill is required.

When the cocoons are ready for winding, that, as well as all the other work thus far referred to, is done by women and girls. To make an even thread requires experience, care, and skill, and such labor commands wages accordingly. Spinning, warping, dyeing, and weaving are all more or less skilled branches and require skilled labor.

There are some establishments that buy the cocoons, wind them, spin the thread, and weave the cloth; but nine-tenths of the silk, raw and manufactured, of the country is family-made. The machinery of manufacture, whether in the factory or private house, is crude, and still remains as though Jacquard and Arkwright never lived. The beautiful stuffs made by such crude means testify to their skill and ingenuity.

The man who tends the trees commands ordinary farm-wages, while the leaf-pickers and feeders, winders, spinners, and weavers of plain cloth will get from 20 to 40 cents per day. Weavers of fancy patterned goods get much more, even as high as \$1 per day; but this is very exceptional.

Cotton.—Reliable statistics cannot be obtained by which to estimate the amount of this staple raised in the country. The returns of 1875 show cotton goods manufactured to the value of \$10,564,578, and that it formed part of textures valued at \$12,915,586. The cotton itself is coarse, and in consequence the manufactured cloth is of an inferior quality, and the labor employed is not skilled and commands small wages. It is generally believed that these manufacturers have increased within the past few years from 30 to 50 per cent.

ARTISANS.

The Japanese artisan, like the farmer, has always held a respectable position. He was in a class above the merchant and banker, but in reality his position, pay, and privileges were no greater.

For a thousand years a very high mechanical art has existed. The Japanese articles and implements of steel were of the best. Some of the old swords are worthy to be classed with the Toledo and Damascus blades. Their lacquered wares have been and still are unrivaled, and they made beautiful porcelain long before Palissy and Boettcher were born. Their silk cloth, embroideries, and silk tapestries were exquisitely beautiful at a time when some Western peoples wore the coarsest stuffs. Their oldest bronze compares with the finest products of Europe. Their paintings on silk and paper, porcelain and lacquer, excite the warmest admiration. Their ivory and wood carvings are wonders of skill, ingenuity, and patient labor.

There is hardly a house in Japan where some mechanical trade is not carried on. Even in the households of the higher classes, silk, cotton, and other goods are made by the servants, and the members of the family have some knowledge of the art. Every farmer's house has its wheel and loom. Many of the smaller merchants make more or less of their goods.

In this view there are many more artisans in the country than are shown by the census of 1875. The number, as I have previously stated, is placed between 700,000 and 800,000. I believe that there are more than double that number who devote the greatest share of their time to manufacture, and five or six millions who work more or less at mechanical trades.

Many of the wares used for home consumption require no special skill in their production, and therefore the labor wage is low. In the manufacture of silk, lacquer, porcelain, enamels, bronzes, embroideries, and in their paintings, skilled labor must enter, and is paid proportionately.

What has been said of agricultural labor as to the use of machinery can be repeated of mechanical work. It is, in the main, hand labor. Labor-saving machinery does not enter as a factor, to any appreciable extent, into the industries of Japan. I doubt if there are more than two saw-mills in the whole empire. All such labor is by hand in every branch of mechanical art.

Porcelain and earthenware.—Porcelain and earthenware are manufactured in every province. By the last census returns available (1875) the value of all porcelain produced was about \$3,000,000. With one exception, that of the home department in the province of Hiizen, there is no foreign machinery or mode of manufacture in use. The clay is manipulated as it was in the earliest days. The same wheel is used for turning that is pictured on the walls of the tombs and temples of Egypt. All decorations are by hand. There is a marked improvement of late years in designs and decorations of all kinds of articles of ornament.

No more beautiful or exquisite ceramic articles are made than come from the hands of the Japanese artisan. Love of beautiful pottery has been a national passion for a thousand years, and skilled labor has commanded relatively high wages.

Much of the cruder work can be done by apprentices and common journeymen, but a good turner at the wheel gets from 50 to 70 cents per day, and the best painters from 75 cents to \$1.15. The average is, however, much less.

Makers of flowers and figures of birds, &c., for ornamenting the larger vases and jars in bas-relief receive from 50 to 70 cents per day. A safe person skilled in baking the ware can be had for from 40 to 60 cents per diem, and clay washers and mixers at from 20 to 30 cents.

Enamels.—Makers of enameled copper and porcelain receive much the same wages. The enameled copper or cloisonné of the present time commands higher prices in the market than any now made elsewhere. There has been the greatest improvement within the last three or four years. When machinery takes the place of the hand in shaping the copper base and in polishing the enamel the ware can be produced for much less than at present, and probably of a superior quality. As it is, Japan has no close competitor in the finer articles of this manufacture.

Bronze.—Bronze workers get about the same wages as workers in porcelain. The highest skill in inlaid bronze manufacture commands from \$1 to \$1.50 per day, but ordinary skill can be had from 30 to 70 cents per day.

Ivory carvers get from \$10 to \$20 per month; carpenters from 25 to 50 cents per day; blacksmiths are cheaper, and can be had from 18 to 40 cents per diem.

Lacquer.—Modern lacquer-workers, in the best product of that art, rank with porcelain and bronze artisans. Wages range from 20 cents to \$1.25 per day, according to the skill of the individual and the grade of the article made.

It has been thought the art of making fine lacquer was on the decline, but I think this is a mistake, and that as fine, if not finer, articles than ever graced the Tycoon's castle can be made if the same prices are offered.

Ship-builders work mostly near the open ports, where wages are much higher than in the interior. A good ship-carpenter gets 40 to 50 cents per day, and a foreman from \$50 to \$60 per month.

PROFESSIONAL LABOR.

As was seen in giving the statistics of education, the average yearly salary of all the school-teachers in Japan was 44.72 yen.

Physicians, as a rule, do not charge for the visit to the patient, but for the medicine which they give; but as one who has reputation charges more for the same medicine than the less-known practitioner, it amounts to the same thing. An ordinary physician will receive a call in office hours and give medicine for 12½ to 20 cents. As to charges for surgical cases, the knife was unknown to the old school. The fees of the new foreign school cannot be much higher, for if they were the physicians would not get patronage.

Lawyers.—Until lately, there were no native lawyers. Now several are practicing before the courts in Tokio and Yokohama. It can hardly be said that they have established a footing yet, or that the profession has a well-defined existence. As no civil code has been adopted, and

as the criminal code has been little modified, it may be a long time before they reach a position of much importance.

Writers, translators, and interpreters can be had at all prices, from \$10 to \$50 per month; *clerks, salesmen, and bookkeepers* command from \$10 to \$20 per month, including board.

COOLY OR COMMON LABOR.

This is the lowest class of labor in Japan. As has been stated, these people were the serfs of the soil. Although the whole class system has been done away with, yet the effect of a thousand years of degradation remains. The year 1868 found this class in utter poverty. Probably not one in a hundred of them owned a foot of land or the rude roof which illy sheltered their heads from the storms. Twelve years have done much to improve their condition. Many now own their houses and tools. Some have bought land and are now farmers on their own account. Wages have been raised, and schools, in many instances, are available for their children.

Carriers.—Probably the hardest-worked laborers in Japan are the carriers. This class includes the jinrickisha men, car-men, and packers. Jinrickishas, or man-wagons, introduced into Japan by a foreigner, in 1870, are now in use in all parts of the country, and it is estimated that they number between 300,000 and 400,000. A man is expected to go from 30 to 40 miles per day, pull this carriage, of some 50 pounds in weight, with a man weighing 150 more, over all kinds of roads, and he gets from 35 to 60 cents for it. Some own their own jinrickishas, but in most cases a company or guild is the owner, and for rental of a vehicle the cooly must pay from 6 to 10 cents per day. The cost of these carriages is from \$12 to \$16 each. One of these men will carry you 6 miles in an hour, and when you stop to make a call, the poor fellow, bathed in perspiration, waits, perhaps, in a cold winter wind or storm, with no protection but his cotton garments. The result is necessarily rheumatism, consumption, and a short life.

Car-men.—There are two kinds of cart carriage—one where the cart is drawn by men, and the other by a bull or cow. Where man-drawn, usually there are four men—two in front and two behind. They draw heavy loads, and go slowly, indulging in a sort of measured shout, to mark time. In the south, smaller carts are in use—some for two and others for one man. I have seen an old man and a young woman, the latter with a small child strapped on her back, pulling a cart-load of wood or coal up steep hills and over sandy plains. Ten to twelve miles a day with a loaded cart is a day's work, and 600 to 700 pounds an average load for two persons. For this heavy work from 10 to 20 cents each per diem is considered good pay.

However dark this picture, these people know how to enjoy it. They go in a train of several carts, taking their food, rain-coats of plaited straw and sun hats, and at intervals stop by some stream where there is clear water and cool shade, where, with the laughter and light-heartedness of children, they indulge in their simple meals.

Bull-carts are drawn by only one animal. The driver walks by the latter's side and guides him by a small cord fastened to his nose by an iron ring. The bull is stout, quiet, and gentle; he will go about 12 to 15 miles per day, and draw 600 to 700 pounds. The earnings of such a cart and man are about 50 cents per day.

Packers.—These are of two kinds—men and women who carry loads of produce and goods on their backs over the mountain paths and along the

highways, down to the rivers and sea-coast, and those who use horses for the same purpose. Men and women carry from 80 to 120 pounds each, and go from 12 to 15 miles a day, earning from 10 to 16 cents. The horse, in summer, gets little but grass, with, perhaps, a little rice or barley bran. There are no iron or steel shoes worn by pack-horses. They are shod with straw, and, in the interior, these straw shoes cost 2 cents per set. On some of the stony roads two sets are required per day.

The other cooly labor has been referred to when treating of farming and mechanical industries, where they are used to do the heavy and coarse work.

FISHERMEN.

Surrounded on all sides by the ocean, indented everywhere by broad gulfs and bays, all the alluvial portions cut up by tidal streams and canals, the waters swarming with a great variety of food-fishes, it is only natural that there should be a numerous fishing population in Japan. There are no separate returns of this class, but it is very large.

Every shore has its fishing villages. All the bays and inlets, on fair days, are white with the sails of fishing-boats. I am inclined to think that this is the lowest class in the country. Their houses are the poorest and dirtiest, and they are the least intelligent. There are fewer schools in these isolated villages than elsewhere and the percentage of illiteracy is greater. Physically they are the equals of the other people, which is owing to a plentiful supply of fish-food. There is no religious or other prejudice against eating fish, and all kinds are cheap.

A good fishing-boat for two men costs about \$70. On fair days an average catch is from 60 to 90 cents' worth. The wages of an able-bodied fisherman, working by the day, are 15 to 20 cents. Women and children work along the shores at low-tide, gathering oysters, clams, &c.

The preparation of salted fish gives employment to large numbers of the cheaper class of laborers. This numerous fishing population, the island location of the country, the numbers and variety of fish in all the waters, the cheapness of transportation from the fisheries to the centers of population on the sea-shores and river banks, all have an important bearing upon the welfare of the laboring class.

In the larger towns the fish-markets are all under the control of guilds, and in some places the boats are owned and the men employed by these guilds. In the city of Nagoya, in the province of Owari, the fish guild four years ago owned 1,200 boats and employed 4,000 men. Some of these boats were large and carried 8 and 10 men. Their sales of fish were \$1,500,000 per year.

Fish can be had at all prices, from 2 to 12½ cents per pound, according to the quality and the locality where sold. The product of the fisheries in 1878 was about \$10,000,000.

MINERS.

The mines of Japan, in the value of the product, do not take high rank. The total value from all mines and quarries in 1878 did not exceed \$5,000,000.

Labor is cheap, and for poverty and ignorance the miner takes a position side by side with the fisherman. His lot is harder and his pleasures are less. Common mine labor can be had for from 8 to 20 cents per day, and by the month for less.

Exactly what the mine wealth of Japan is cannot be ascertained at present, and probably will never be known until the country and its

hidden resources are opened to foreign skill and enterprise; and this may be said with equal truth as to the cultivable lands. If worked in large tracts by skilled labor and modern foreign implements, the taxable wealth of the country would be vastly increased.

SPORTS AND PASTIMES.

The national sports and games of Japan were less active and athletic in character than those of Europe and America. The samurai were fond of horseback riding, but the laboring classes were not allowed to ride on the public roads. Even now, when the pack-horses are returning unloaded from market and the drivers ride a portion of the way, they make sure to dismount in the presence of any of the old, higher class. The absence of roads also discouraged the practice of equestrianism. Foot races or walking matches were not in vogue. So of boat-racing. Exclusively warlike games and practices were indulged in by the higher classes. They practiced archery and fencing, and, on eating and drinking occasions, had trials of strength and skill within doors.

The lower classes had a more active class of sports. Under the harvest moon you may see a whole village collected to witness wrestling, racing, and fencing. Theatrical performances are popular, and traveling troupes of actors go from village to village, erect bamboo and mat shelters, and give entertainments for a week at a time. On such occasions the laboring classes turn out in great numbers, with all their holiday finery on, and enjoy every incident of the performance. Laboring men in the evening go to tea-houses, drink a light wine made from rice, sing songs, play games of skill, and recite in dramatic style from the old historians and poets. Women and girls gossip in groups at some neighbor's house or at the public baths. Women play a simple game of checkers, while men are skilled in chess. The children have battle-dore and kite-flying.

In addition to this the Japanese are great travelers. In certain months when farm labor is not pressing, 20 or 30 friends and neighbors will arrange a pilgrimage to some of the noted shrines and temples in the mountains, going on foot as far as 150 or 200 miles. They walk leisurely along the roads and paths, talking, laughing, and singing. In the middle of the day, when tired, they sleep in the shade of the groves, eat rice and drink tea, and are as happy as the day is long.

These pilgrimages are an important feature in the social life of the laborer. They afford mental and physical relaxation, give extended observation of wide regions of country, of new, varied, and better industries, and an insight into the life and habits of their far-off countrymen.

There is another amusement to be met with on festival days, which, in the smaller villages of the interior, still exerts an influence upon the lower classes. I allude to the wayside story-telling. This afforded the only means which certain classes had of knowing the history of their country. The story-tellers have rude booths, and for a mere pittance recite by the hour the civil and military history of the different dynasties which have ruled the country. They speak the pure old Japanese unmingled with Chinese words, which the learned affected, and thus are perfectly understood by their hearers.

LABOR ORGANIZATIONS.

Every branch of labor and trade has its guild, although not, like those of western countries, originally formed to protect labor from the exac-

tions of capital. The government for purposes of revenue, farmed out to favorites exclusive privileges of trade or of labor, and these persons formed guilds and levied taxes upon all engaged in such occupations. These organizations, in time, fell more and more under the influence and control of those taxed. They gradually grew to be used for the protection of the interests of the trades. They could petition the local authorities, and, from their numbers and unity, had no inconsiderable influence.

Although the government has abolished this practice of farming these guilds and substituted therefor individual licenses the guilds still exist and zealously guard the interests of their members.

As has been said, there are no manufactories employing large capital and great numbers of operatives, but the manufactures of Japan are distinctively household. In some cases a few outside laborers are employed, but in many, perhaps a majority of these household workshops, the laborer is interested in the capital and profits of the manufacture.

If labor-saving machinery, large capital, and great establishments employing hundreds of people shall ever be introduced, these guilds now operating partially in the interest of labor may assume the importance and influence of the labor organizations in the United States.

FINANCES.

While the finances of a country have an important bearing upon the condition of the laborer, it is not within the province of this paper to enter into an elaborate review of the financial system of this country. Briefly the estimates of the revenues of the general government are, for the year 1880-'81, \$54,558,304. The principal sources of this revenue are as follows:

1st. Land tax	\$41,901,441
2d. Imports and exports.....	2,360,462
3d. Taxes on spirits, tobacco, stamp taxes, licenses, &c.....	9,000,000
4th. Income from government property, such as sales and rents from public lands, yield of mines, &c.....	1,400,000

The burdens of taxation are light upon all industries except agriculture, where the tax is a uniform one of 3 per cent. of its value, as has been shown, estimated from its products. The estimated expenditures are the same for the year 1880-'81 as the revenue, the principal items of which are for—

Reduction of national debt	\$5,817,538
Interest of national debt.....	15,631,369
Pensions.....	1,059,403
Expenses of the ten departments of the government	23,051,409
Expenses of local or provincial governments.....	4,539,280
Police	1,261,500
Miscellaneous: home and foreign industrial exhibitions, libraries, museums, &c.....	1,331,559

Currency.—The currency of the country is—

1st. Treasury notes.....	\$108,683,203
2d. National bank notes, about	32,000,000

Making the total paper circulation about

140,683,203

The treasury notes are irredeemable, but are interchangeable for six per cent. government bonds. There is an annual drawing for a certain amount of these bonds, which are paid at par, in gold.

The national bank issues are secured by a deposit of government bonds of 80 per cent. of the amount so issued, but are redeemable only in treasury notes.

Both the treasury and bank notes are much depreciated and are now, September, 1880, worth from 60 to 70 cents only, in silver.

The debt has been reduced during the past year nearly \$11,000,000, and the estimated reduction for the present year is about \$6,000,000. The interest on public debt for the present year, 1880-'81, is \$15,631,369.

PAUPERISM.

In all time Japan had her beggar class, who were permitted to solicit alms by the roadside, and to live in huts on the waste lands. The origin of this class is unknown. Whether they are descended from the lepers or from pardoned criminals, and thus outcasts, or from the conquered aborigines, is uncertain. Although they may still be seen here and there by the roadsides, the government discourages these proceedings, and in many cases they are arrested and subjected to punishment. There was an attempt some years since, by the various local authorities, to reduce the number of these beggars by furnishing them with labor, food, and clothing, but without marked success. With this exception, the government has never made any provision for the extremely poor. Farms for the poor, pauper asylums, systems of out-door relief, were and are unknown. In fact, there was little need for them. So little food and clothing will supply the wants of the poor that the near and distant relatives of which the family and class are formed were enabled to provide that little. As the influence of the family organizations grows weaker and their responsibility less, the necessity of some public provision begins to be felt.

There is another feature of society here which makes numbers of aged, indigent people less dependent upon public charity. The family never becomes extinct, the line of descent never ceases. If there are no male children to bear the name, a younger son of another family is adopted, who takes the family name, and upon whom the aged and decrepit lean for support.

THE BLIND.

The number of blind persons in Japan, owing to causes already enumerated, is very large. In every city or village of any size they are organized into associations or guilds, controlled by a president or head man. This officer, although chosen by the members, was formerly commissioned by the government authorities. Unless otherwise disabled, the blind are not idle. They go about the streets making their presence known at night by blowing, every few steps, upon a shrill whistle, and are employed as shamppoers by any one in pain or suffering from fatigue. Their districts of labor, prices, and general behavior are regulated by the head officer. They live by themselves, do their own cooking, and are, in general, a peaceable and worthy class, and not a burden upon the community.

SCENERY.

The remarkable beauty of Japanese scenery has won the admiration of every visitor. Her grand mountain ranges, covered with trees and shrubs, clothed in perpetual green, towered by the world-renowned Fujiyama, rearing its shining summit above the clouds, revered by millions of her people as the reflection of Deity itself, and the holy shrine to which thousands of pilgrims yearly bend their steps; the charming and picturesque valleys, carpeted with richest verdure and blossoming with flowers of a thousand hues, including the lotus, queen

of lilies, which fills the atmosphere with its rich perfume; the rushing torrents and winding rivers, sparkling with clearest water; her numerous and varied islands; her indented coasts, bays, and harbors; her varieties of shrubs and trees, and her skies of purest blue—all combine to make their impress on the character of her people.

Cheerfulness of disposition and love of the beautiful are striking characteristics of the native of Nippon. Born and reared amidst such charms of nature, forms of beauty become to them every-day familiar objects, and it is no matter or wonder that they bring into existence some of the loveliest works of art that human hands have ever formed, or that the smiles of sky and earth, air and sea, should be reflected on their faces and in their lives.

The laborer sings at his toil, goes cheerfully to his simple meal, and engages with the enthusiasm of boyhood in his holiday sports.

ETHNOLOGY.

It is perhaps too early to state with certainty to which of the families of the human race the Japanese belong.

Morton, long since after examining a number of Japanese crania, decided that they are not of Chinese origin. Their language, which is always considered the strongest evidence of race, makes it certain that they are neither Chinese, Polynesian, or of that aboriginal race to which the inhabitants of northeastern Asia belong. Whitney and Müller are inclined to place them in the great Indo-European family. If so, the conquerors of these islands must have started from the central regions of Asia, and instead of traveling west, as the other migratory hordes did, came east, crossed to Japan, and wrested the country from the Ainos, the then possessors of the soil.

ORIENTAL CIVILIZATION.

The distinctive characteristic of Oriental civilization, as compared to ours of the west, is its extreme simplicity of food, dress, houses, household appurtenances, and general style of living. The precepts of religion, the maxims of government, and the fashions of the times inculcate and command the practice of frugality and rigid economy, while the whole influence of western civilization tends to lead the laborer to habits of show and luxury beyond his means. Our styles of architecture, of food, and of clothing are incomparably more costly than those of the Orient.

If a Japanese laborer had to live in our style of house, eat our animal flesh and pastries, and wear our clothing, to say nothing of the social demands upon his time and means, the cost of his living would be more than quadrupled, and the price of his products enhanced accordingly. This question of the comparative simplicity and cost of living and of production of the two civilizations will grow in importance as the two systems are brought more and more into contact and competition.

There are seven or eight hundred million people dwelling on the southern and eastern shores of Asia, the majority of them workers, living up to the requirements of this Oriental simplicity, who are all ready to compete with our people in every branch of human industry. And it may be worth our while to inquire if the demands of our social system do not handicap our laborer too heavily in the contest. Of course it is not to be contemplated that our laborers are to be put upon the rice, fish, or vegetable diet of these eastern workers. Our climate alone utterly

forbids such a consummation, if, in any view, it were desirable. The labor-saving machinery, created from the active brains of our inventors, so often looked upon by laboring men as destructive of employment and ruinous to their interests, constitutes for the present the barrier which protects them and their interests against the rapid and perhaps lowering competition of the vast masses of laborers to which I have alluded. But this is not all that is needed. The reduction of taxation and equalization of the burdens of government, as far as possible, the multiplication of cheap means of transportation, the building of economical and comfortable houses in cities, the positive prevention of swindling in food and clothing, the rigid scrutiny of all beverages sold, and the prohibition, under the severest penalties, of the sale of impure drinks, and the encouragement of proper co-operative associations for the purchase and sale of good and cheap provisions, are all necessary for the welfare of our great laboring population, the producers of our wealth and prosperity.

THOS. B. VAN BUREN,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Kanagawa, October 6, 1880.

TABLE A.—Showing prices of food in Japan, according to quality.

		Cents.
Rice.....	per pound..	2 to 3
Barley.....	do.....	1½ to 2
Wheat.....	do.....	1 to 1½
Millet.....	do.....	¾ to 1
Wheat flour.....	do.....	2 to 3
Salt.....	do.....	¼ to ½
Sugar, common brown.....	do.....	4 to 5
Sugar, white brown.....	do.....	8 to 10
Pease.....	do.....	1½ to 2
Beans.....	do.....	1½ to 2
Potatoes, Irish.....	per 100 pounds..	20 to 40
Potatoes, sweet.....	do.....	12 to 25
Onions.....	do.....	20 to 40
Carrots.....	do.....	20 to 30
Cabbages.....	do.....	15 to 20
Egg plants.....	per pound..	1 to 1½
Parsnips.....	per 100 pounds..	20 to 30
Turnips.....	do.....	10 to 20
Squashes.....	do.....	11 to 15
Watermelons.....	each..	2 to 5
Muskmelons.....	do.....	1 to 1½
Peaches.....	per pound..	2 to 3
Pears.....	do.....	1 to 2
Plums.....	do.....	2 to 3
Grapes.....	do.....	2 to 2½
Ducks, tame.....	each..	20 to 35
Ducks, wild.....	do.....	15 to 30
Geese, tame.....	do.....	40 to 50
Geese, wild.....	do.....	30 to 50
Pigeons.....	do.....	10 to 12
Pheasants.....	do.....	10 to 20
Fresh fish.....	per pound..	2 to 20
Oysters.....	per quart..	6 to 10
Clams.....	do.....	6 to 10
Salt fish.....	per pound..	3 to 10
Beef.....	do.....	12 to 18
Pork.....	do.....	10 to 15

As I have remarked, little animal flesh is eaten by the laborer. It is only in the open ports that it is at all used.

Milk, butter, and cheese are also unknown articles of food.

TABLE B.—*Japanese taxation.*

Land tax (local and general government), 3 per cent. on valuation.

Corporations:

On sales amounting to—

	Yen.	Sen.
10,000 yen and over	15	00
7,000 to 10,000 yen	13	00
5,000 to 7,000 yen	10	00
3,000 to 5,000 yen	7	00
1,000 to 3,000 yen	5	00
700 to 1,000 yen	3	00
under 700 yen	1	50

Merchants, wholesale:

On sales amounting to—

10,000 yen and over	15	00
7,000 to 10,000 yen	13	00
5,000 to 7,000 yen	10	00
3,000 to 5,000 yen	7	00
1,000 to 3,000 yen	5	00
700 to 1,000 yen	3	00
500 to 700 yen	2	00
300 to 500 yen	1	00
100 to 300 yen		50
under 100 yen		25

Merchants, retail, and goods brokers:

On sales amounting to—

10,000 yen and over	15	00
7,000 to 10,000 yen	13	00
5,000, to 7,000 yen	10	00
3,000 to 5,000 yen	7	00
1,000 to 3,000 yen	5	00
700 to 1,000 yen	3	00
500 to 700 yen	2	00
300 to 500 yen	1	00
100 to 300 yen		5
30 to 100 yen		2.5

Public and private libraries, lenders of furniture and articles of clothing, &c.:

On gross income 1 per cent.

Commission merchants:

On gross commissions received 1½ per cent.

Contractors:

On gross receipts 1½ per cent.

Manufacturers, corporations:

On sales amounting to—

	Yen.	Sen.
10,000 yen and over	15	00
7,000 to 10,000 yen	13	00
5,000 to 7,000 yen	10	00
3,000 to 5,000 yen	5	00
1,000 to 3,000 yen	3	00
700 to 1,000 yen	2	00
500 to 700 yen	1	00
300 to 500 yen		50
under 300 yen		25

Mechanics:

House painters, clock, paper, and lacquer-ware makers, carvers, image-makers, photographers, pen-makers, picture-painters, match manufacturers, makers and mixers of colors, embroiderers, tailors, washmen, gold, silver, and tin smiths, pot and kettle workers, blacksmiths, carpenters, locksmiths, porcelain and bronze workers. Same as above.

Carriers:

Carriages—

	Yen.
2 horse carts per annum	3
1 horse cart per annum	2
Jinrickshas to carry two persons	2
Jinrickshas to carry one person	1
Wheelbarrows	1
Pack-horses	1

Carriers—Continued.
Carriages—Continued.

Man-carts, two men	Yen.
Man-carts, four men	1
	2

Auctioneers:

On gross sales 3 to 5 per cent.

Theatrical, acrobatic, and other exhibitions:

In houses, on gross receipts 5 per cent.

Billiard rooms, bowling alleys, archery galleries:

Per month	Yen. Sen.
	1 00

Eating-houses:

On gross receipts of—

800 yen and over	12 00
From 500 to 800 yen	10 00
From 300 to 500 yen	6 00
From 200 to 300 yen	3 00
200 and under	1 50

Hotels with stables attached:

On receipts of—

800 yen and over, per annum	10 00
500 to 800 yen per annum	9 00
300 to 500 yen per annum	7 00
200 to 300 yen per annum	2 50
100 to 200 yen per annum	1 00
Under 100 yen per annum	50

Eating-houses, in each of which only one kind of food is permitted to be served:

On gross receipts of—

800 yen and over, per annum	Yen. Sen.
500 to 800 yen per annum	10 00
300 to 500 yen per annum	7 50
200 to 300 yen per annum	5 00
100 to 200 yen per annum	2 50
Under 100 yen per annum	1 00
	50

Pawn-shops:

On gross receipts of—

10,000 yen and over	15 00
7,000 to 10,000 yen	13 00
5,000 to 7,000 yen	10 00
3,000 to 5,000 yen	7 00
1,000 to 3,000 yen	5 (C)
700 to 1,000 yen	3 00
500 to 700 yen	2 00
300 to 500 yen	1 00
100 to 300 yen	50
Under 100 yen	25

Exchange brokers:

On income, same as above.

Transportation companies:

On gross earnings of, same as above.

Junk-shops:

On transactions of—

5,000 yen and over	Yen. Sen.
3,000 to 5,000 yen	10 00
1,000 to 3,000 yen	9 00
700 to 1,000 yen	7 00
500 to 700 yen	5 00
300 to 500 yen	3 00
Under 300 yen	2 00
	1 00

Booths (for tea drinking):

Per month, each 50

Places for sale of ice-water:

Per month, each 80

Bath-houses:

On gross receipts 1 per cent.

Barber's license:

Two yen per year, and 1 per cent. of gross receipts.

Intelligence offices:

License of 5 yen per year.

Dancing-masters, music-teachers, street story-tellers, and actors:

License, 1 yen per month.

Wrestlers:

License of 50 sen per month.

Regular singing and dancing girls:

License from 1.50 to 3.50 yen per month.

Licensed attendants upon dancing and singing entertainments:

Seventy-five sen to 2 yen per month.

Water-power mills for hulling rice:

	Yen. Sen.
20 stamps and over, per annum	5 00
10 to 20 stamps per annum	3 00
5 to 10 stamps per annum	1 50
3 to 5 stamps per annum	50
Less than 3 stamps per annum	30

Live stock:

Horses, each, per annum	1 00
Grown cattle, each, per annum	20
Young cattle, each, per annum	10
Sheep and hogs, each, per annum	05

Marine licenses:

Junks or native vessels, with a capacity to carry 500 bushels and under, per annum	1 00
Every 500 bushels additional, per annum	1 00
Steamers, each, 100 tons measurement, per annum	15 00
Sailing vessels, foreign model, each 100 tons, per annum	10 00
Small boats, 20 sen to 1 yen, per annum, according to size.	

Shooting licenses:

Professional hunters, per annum	1 20
Others, per annum	10 00

Horse and cattle dealers:

Licenses, per annum	2 00
For every animal sold, additional, per annum	1 00

Manufacturers of weights and measures:Twenty-five per cent. *ad valorem*.**Druggists:**

License, 2 yen per annum.
 All patent medicines, 25 per cent. *ad valorem*.

Manufacturers of alcoholic drinks:

The tax is levied upon the quantity of rice used in brewing.
 Common saké (a species of wine), from 2 to 4 yen, according to quality, upon each kohn (about 5 bushels) of rice used.

Tobacco:

License, wholesale dealers, per annum	Yen. 10
License, retail dealers, per annum	5
There is also a stamp tax of 2 per cent. on all sales.	

Stamped paper:

All written transactions of 10 yen and above pay a tax of 3 sen.
 No agreement in writing can be enforced without a stamp.

Copyright:

The price of 6 copies of the work is charged.

Stock-brokers:

Ten per cent. of commissions.

Bankers:

On every 1,000 yen loaned, 7 yen.

Passengers on foreign vessels, 10 sen per head.**Houses of prostitution, 1 to 7 yen per month.****Every inmate, 1 to 4 yen per month.**

Taxes are collected in the different Fu and Ken (provinces of the empire), and the expenditures for local purposes must first be approved by the general government.

CULTIVATION OF COTTON AND SUGAR IN JAPAN.

REPORT BY CONSUL STAHEL, OF HIOGO.

I have the honor to report that on the 15th of February, 1880, an industrial exhibition was opened at Osaka for the object of promoting the cultivation of cotton and sugar in Japan.

At the opening of the exhibition, Mr. Kawase Hidetsnyu, first-class secretary of the finance department and superintendent of commercial affairs, read an address, from which I quote the following statement:

For the years 1874, 1875, 1876, and 1877 the whole exports from Japan amounted to 92,000,000 yen, 62 per cent. of this being tea and silk. The imports during the same period amounted to 106,000,000 yen, of which sugar and cotton contributed 48 per cent. The average (yearly) quantity of these products used in Japan during the same period was 90,000,000 pounds of sugar and 70,000,000 pounds of cotton, and the average (yearly) quantity of sugar produced in Japan was a little over 27,000,000 pounds, and that of cotton under 26,500,000 pounds.

In addition to the foregoing I inclose a statement of the number of exhibitors by departments and provinces.

J. STAHEL, *Consul.*

UNITED STATES CONSULATE,
Hioo, March 1, 1880.

Number of exhibitors at the Industrial Exhibition held at Osaka in 1880.

Name of fu or ken.	Name of province.	Exhibitors.		
		Cotton.	Sugar.	Total.
Tokio.....	Musashi.....		4	4
Kioto.....	Yamashiro, Tawba, Tawgo.....	240	1	241
Osaka.....	Settsu.....	2,269	2	2,271
Kanagawa.....	Musashi, Sagami.....	82	1	83
Hioo.....	Settsu, Awaji, Harima.....	196	12	208
Nagasaki.....	Hizen.....	6	5	11
Niigata.....	Yechigo.....		2	2
Taitama.....	Musashi.....	27	0	27
Chiba.....	Kazusa.....	122	1	123
Ibasaiki.....	Hitachi Shimozusa.....	361	2	363
Gurnuwa.....	Kozuké.....	12	0	12
Tochigi.....	Shimozuké.....	47	3	50
Sakai.....	Yamato, Kawachi, Izumi.....	357	77	434
Miyé.....	Iga, Ise.....	201	4	205
Aichi.....	Owari, Mikawa.....	436	9	445
Shizuoka.....	Suruga, Totomi.....	116	198	314
Yamanashi.....	Kai.....	16	1	17
Shiga.....	Omi, Wakasa.....	27	1	28
Gifu.....	Mino.....	21	1	22
Nagano.....	Shinano.....	384	11	395
Miyagi.....	Iitkuzen.....			
Fukushima.....	Iwashiho.....		1	1
Amori.....			10	10
Yamagata.....	Uzen.....	1	1	2
Iahikawa.....	Kaga, Noto, Yetchu, Yechizon.....	28	2	30
Shimane.....	Houki, Izumo, Iwami.....	315	5	320
Okayama.....	Bizen, Bitchu, Mimasaka.....	130	8	138
Hiroshima.....	Bizen, Aki.....	220	40	260
Yamaguchi.....	Suwo, Nagata.....	223	10	233
Wakayama.....	Kii.....	53	33	86
Yehime.....	Sanuki Iyo.....	107	309	416
Kochi.....	Awa, Tosa.....	2	76	78
Fukuoka.....	Chikuzen, Chikuzo, Buzen.....	80	13	93
Oita.....	Buzen, Bungo.....	45	6	51
Kumamoto.....	Higo.....	9	12	21
Kogoshima.....	Huiga, Ousumi, Sateuma.....	17	88	105
Total.....		6,050	949	6,999

The exhibits from Okinawa Ken (or Hoo-Choo Island) have not yet arrived.

TRIAL OF AMERICAN SEED-WHEAT IN JAPAN.

REPORT BY CONSUL STAHEL, OF HIOGO.

I have the honor to report the result of a trial cultivation of American wheat in this district, and the causes that necessitate the introduction of foreign seed.

Next to rice, perhaps the most important farming product of this district is wheat, and since the export of grain has been permitted considerable quantities have been sent away from this port to China and elsewhere. There is no doubt, however, that it would become a much more important article of export were an improvement made in its mode of cultivation. In the first place, the fields are laid down in ridges of a little more than one foot in width, on which are sown two rows of wheat so thickly that the plants have not room to develop themselves. This causes very uneven growth, the outer plants coming to maturity long before those which have a bare struggle for life in the middle of the rows. The result is that the crop ripens irregularly, the ears on the inner plants being quite green, while those on the plants more favorably situated are ready for the sickle.

As this system has been going on for generations, it is not to be wondered at that the quality of grain has very much deteriorated, and the Japanese wheat, instead of being, as it ought to be, equal to any in the world, is about the worst.

The first thing necessary to improve the quality of Japanese wheat is to introduce fresh seed. But this will be of no lasting benefit unless the system of cultivation is entirely changed. The climate of Japan is well adapted to the growth of wheat; the farmers are industrious, and with an improved method of cultivation there is no reason why Japan should not take her place as one of the wheat producing countries.

The governor of this ken, who is aware of the fact that Japanese wheat is not what it should be, is making now an effort to introduce American seed, and with this view has made and is making trials with American seed.

In one of the reports of the agricultural bureau of this ken (department) I find a statement of M. Iwomura Zenrokn on a trial cultivation of American wheat in this district. Five kinds of wheat were sown. Fifteen tsubo (tsubo, a land measure equal to 36 square feet) of red wheat on pure soil produced 9 sho and 3 go. (Sho is a measure for grain of $5\frac{1}{2}$ inches square by $3\frac{1}{4}$ inches deep, and a go is one-tenth part of a sho.) Ten tsubo of white wheat on a gravelly soil produced 5 sho and 6 go. Seven and a half tsubo of sord wheat on pure soil produced 4 sho and 9 go. Fifteen tsubo of Oregon wheat on a gravelly soil produced 12 sho and 2 go. Seven and a half tsubo of brown wheat on a gravelly soil produced 5 sho and 8 go. The red wheat was sown on the 3d of November, the others on the 28th of October, and it was all reaped on the 18th of June.

J. STAHEL, *Consul,*

UNITED STATES CONSULATE,

Hiogo, August 11, 1880.

THE CONSUMPTION OF TEA-LEAD IN JAPAN.

REPORT BY CONSUL STAHEL, OF HIOGO.

I have the honor to call attention to an article of import into Japan, namely, tea-lead, the consumption of which is daily increasing, and amounted during the year ending June 30, 1880, to 3,114,833 pounds, in value of \$221,103.

Tea-lead is at present all imported from Great Britain and I think that the United States, especially the Pacific Coast, with its large production of lead, ought to be able to compete with the English market.

I am informed that English tea-lead is preferred for the reason that it is better suited for the purpose of packing tea, being very thin and perfectly air-tight. I understand that English tea-lead is not rolled, but shaved, and it is the general impression that English manufacturers mix some other substance with the lead. I therefore inclose a sample of the lead mostly used here. The weight of tea-lead mostly used is $4\frac{1}{2}$ ounces to the square foot. The sizes vary somewhat, but 65 by 21, 81 by 21 $\frac{1}{2}$, 82 by 23 inches are the standard sizes. The prices fluctuate from \$8.50 to \$11, Mexican, per picul (one picul equal to 133 $\frac{1}{2}$ pounds).

J. STAHEL, *Consul*.

UNITED STATES CONSULATE,
Hiogo, Japan, September 6, 1880.

Note by the Department of State.—A copy of the foregoing dispatch, upon the receipt of the same at the Department with a sample of the tea-lead, was sent to the Chamber of Commerce of New York. Another sample of the tea-lead is retained at the Department of State, where it may be seen.

KEROSENE OIL AND LAMP-WARE IN JAPAN.

REPORT BY CONSUL STAHEL, OF HIOGO.

The principal article of import from the United States into Japan is kerosene oil; and as, next to food and raiment, light is essential, it is safe to conclude that this article will continue in demand unless the proposed duty should restrict consumption.

At present the duty levied upon kerosene oil is upon the home cost only. I submit for illustration the following data: 1,000 cases of kerosene oil, cost in the United States, \$1,200; duty as at present levied, 5 per cent., \$60; as proposed, 1,000 cases of kerosene oil, containing 10,000 gallons, cost in the United States, \$1,200; duty proposed, 5 cents per gallon, \$500 or 41 $\frac{2}{3}$ per cent. upon the cost; of course any increase in cost of this product in the United States would reduce the percentage of duty, but at the present range of cost the proposed increase of duty would be about 36 per cent. above the present rate of 5 per cent.

In order to show the department the importance of this trade, I inclose herewith, marked No. 1, a table showing the quantities and value of kerosene oil imported from the United States at Kobé (Hiogo), Japan, as compared with the total imports into Japan from the year 1872 (when the first importations were made) up to the close of the year

1879, and from which it will be seen that the total imports amounted to 52,745,088 gallons, in value of \$7,807,571.

The foregoing value is based upon the home cost of the oil, and as almost the entire quantity was imported in American bottoms at an average freight of 3 cents per gallon, I add the freight earnings, amounting to \$1,532,352, to the value of the kerosene oil. Total trade for the United States in kerosene oil and freight \$9,389,923.

Lamp-goods from the United States are also largely imported into Japan, and I inclose, marked No. 2, a statement of the imports from the United States, as compared with the total imports, from which it will be seen that in the years ending June 30, 1873, 1879, 1880, the total value of lamps and fittings imported into Japan was \$294,204, of which amount \$184,274 was imported from the United States.

In speaking of lamp-goods I refer to the cheap, common lamps and chimneys so largely in use by the poorer classes. I am informed that chimneys have to pay upwards of 50 per cent. of their value in freight, while lamps pay from 20 to 30 per cent. freight. Thus:

1,000 dozen chimneys cost	\$220 00
Freight.....	110 00
Insurance, 2½ per cent.....	5 50
Commission, 2½ per cent.....	5 50
Total	341 00

The proposed duty of 20 per cent. on \$341 equals \$68.20 against \$11, as now paid (5 per cent. on the original cost) and \$68.20 on \$220, 33.8 per cent. on original cost, or 28.8 per cent. more than the duty at present charged.

In the case of lamps—

1,000 dozen lamps cost	\$600 00
Freight.....	150 00
Insurance, 2½ per cent.....	15 00
Commission, 2½ per cent.....	15 00
Total.....	780 00

The proposed duty of 20 per cent. would amount to \$156, or 26 per cent. on the original cost of goods, in place of 5 per cent. now charged..

The following statement shows the quantities and values of kerosene oil imported from the United States at Kobé (Hiogo), Japan, as compared with the total imports into Japan from the year 1872 (when the first importations were made), up to the year ending June 30, 1880.

Years.	To Japan.		To Kobé.	
	Quantities.	Value.	Quantities.	Value.
	Gallons.		Gallons.	
1872.....			41,470	\$21,150 00
1873.....	1,000,959	\$330,598 00	279,430	110,548 00
1874.....	1,291,180	306,723 00	282,680	97,113 00
1875.....	2,826,636	573,671 00	738,720	229,789 00
1876.....	3,151,630	520,387 00	1,020,865	145,401 00
1877.....	3,304,926	599,966 00	689,020	140,373 00
1878.....	5,524,604	1,115,182 00	1,713,361	349,051 00
1879.....	17,721,645	2,537,509 00	6,758,466	370,286 00
1880.....	17,923,499	1,803,535 00	4,566,887	474,348 00
Total	52,745,088	7,807,571 00	16,090,899	2,547,039 00

The statement subjoined shows the values of imports of lamp-goods in Kobé (Hiogo), Japan, as compared with the total imports into Japan,

and the share the United States had in the trade, for the years ending June 30, 1878, 1879, and 1880.

Years.	Imported into Kobé.	Total imports into Japan.	From the United States.
1878	\$24,294 00	\$89,408 00	\$54,497 00
1879	29,552 00	87,703 00	65,999 00
1880	38,874 00	117,093 00	63,778 00
Total.....	92,720 00	294,204 00	184,274 00

J. STAHEL,
United States Consul.

HIOGO, JAPAN,
November 2, 1880.

PRESENT CONDITION OF PALESTINE.

REPORT BY CONSUL WILLSON, OF JERUSALEM.

TRADE WITH THE UNITED STATES.

I have the honor to report that the harvest in Palestine is good this year, and it is supposed that there will be a considerable export of grain, especially if there should be a short harvest in any part of Europe.

Fruits from the Jaffa gardens are exported every year to Egypt, and to other North African districts, and to Southern Europe.

The imports of goods for the wants of the natives, are from Italy, Germany, France, and England.

There are many articles for household and farming purposes manufactured in the United States, lighter, better, and more economical than those of Europe, but the difficulty of purchase and of transit, and the expense attending reshipment at Liverpool and at Alexandria, restrict the purchase and traffic within very narrow limits.

Any considerable degree of trade between America and Palestine must be dependent upon the establishment of a line of trading vessels for the coast.

Occasionally, I find an American steam-engine, or gun, or sewing-machine, and it is said that some of the lumber via Trieste is from the forests of America; but, with few exceptions, the only considerable import from the United States is petroleum, for which we are dependent entirely upon the American market.

The transit is by sailing vessels freighted with petroleum to Beirut and to Alexandria. Inasmuch as the amount of imports must depend upon the resources of the people and their ability to purchase, any extended system of commerce must depend upon the increase of agricultural industries.

FORMER AGRICULTURAL GREATNESS.

In former eras this was at least respectable, as evidenced by the ruins of roads, cisterns, gardens, villages, and cities on the hill-sides, in the valleys, and on the sea-coast, and it is but natural to suppose that under the fostering influence of a firm and wise government all of these industries might be revived. The old cisterns should be repaired for

irrigating purposes, the old aqueducts should be rebuilt, roads should be made, harbors constructed, and an extensive system of tree-planting should be inaugurated to temper the atmosphere, to afford cool and refreshing shade, to afford a supply of timber and fruits, and to regulate and distribute the dew and the rain-fall.

PRESENT MISERY.

For centuries the country has been declining, and it is still declining; the peasantry, the only producing classes—they are the farmers—are more and more depressed by taxation and extortions, and are becoming poorer and more degraded. Where their fathers lived in marble houses they now live in mud hovels or hovels of loosely constructed and unhewn stones. Their aspirations are groveling, their resources limited, and their progress, if any be noted, is progress backwards.

The complaints against the government are numerous, but there is no redress and no present means of redress. Not only are the taxes onerous; the extortions of the tax-gatherers under the farming system are outrageous.

The fellaheen have no love for their masters, the ruling Turks. The Turk is a soldier and a gentleman on horseback; he has no genius for construction or for making repairs. Hence the evidence of ruin and degradation of ancient noble works on every hand.

Raouf Pacha, the governor of Palestine, who is an accomplished man of European culture, proposes to construct some roads to Hebron and to Nablous, and to repair the road to Jaffa, and he has for this purpose obtained a concession from the Sultan of 20 per cent. of the taxes the present year.

The harvest is good, and the taxes large, viz, one-tenth gross from every threshing floor. With the exception of the road to Jaffa, there is nothing worthy of the name in Palestine.

PROSPECTIVE IMPROVEMENTS.

Some years ago a firman was obtained by a French company for a harbor at Jaffa and a railway to Jerusalem, and about once a year a corps of engineers appears, with maps, and charts, and surveys, and promises; but beyond a little demonstration of this kind, nothing is done, nor is there any immediate prospect of the inauguration of the work. The presumption is that the capital requisite has not been subscribed; nor do the statistics of the transit and of commerce warrant such an enterprise. The population is too spare, the resources of the country too limited, and property, and life even, too insecure.

Recently a firman has been obtained for a tramway from Jaffa to Jerusalem and to the Jordan Valley; also, a firman has been obtained for a line of steamers on the Dead Sea for the transport of salt, bitumen and grain; but the firman states expressly that the government does not guarantee protection against the aggressions of the Bedouins. As yet such an enterprise must be regarded as premature, and the time is inopportune and the circumstances are unpropitious.

The Palestine Railway Company has been organized in New England under the railroad laws of Massachusetts, and it is proposed to ask for a firman of the Sultan for the building of a railroad from Egypt to Damascus and to the Euphrates Valley. I do not learn that capital stock has been subscribed, nor is it probable that a firman can be ob-

tained. Just now the Porte is exceedingly jealous of all foreign influence and interference. The Sultan wishes to be let alone.

Were the Euphrates Valley rehabilitated, and were there a strong and stable government, and were the natural resources of the country developed, with an augmented population, such a railway might be regarded as a promising enterprise; but at present, and under the circumstances, it would not pay 3 per cent. on one-tenth of the cost of construction. Such a railway has been talked about by the English people; and as a political measure by the British Government, for the protection of the India possessions, it might possibly be regarded as feasible, without regard to cost or profitable returns upon the capital invested.

The population and the wealth of Palestine have not increased during the last forty years. The fellaheen (peasants), the agricultural class, are poor, ignorant, squalid, and prejudiced against innovations either in manners, customs, or religion. They are exceedingly religious in rites, ceremonies, fasts, and festivals. Their wants are few and their resources limited.

NEEDED REFORMS.

The masses of the people in Jerusalem are mendicants and beggars. The old families of wealth and influence and splendor are decayed and decaying.

The subject of reforms still agitates political circles at Constantinople, nor do I see how the proposed reforms can be effected of the Turkish Government, which is in fact a theocracy, a religious despotism, the constitution being the Koran and the interpreters the chief priests of the Moslem religion, to whom great questions are referred for decision by the Sultan and his cabinet. Other religions exist by sufferance, and for a Moslem to abandon his religion or to become a Christian is a capital offense. Reform implies revolution. Western ideas and Western institutions cannot be ingrafted upon an Oriental Stock. Reformation in the Western sense of the term means overthrow, and the substitution of another system of government. True, there might be amelioration of the present system. Taxes might be, if not lighter, less capricious, and surely some means might be devised against the extortions of the tax-gatherers, whose cupidity is excited by the evidence of possessions so that the poor fellah has no encouragement to exertion; the less he has, the less the amount of payment to the publican.

The annual cost for the support of an average fellah family of six persons is \$50, seldom more than \$75.

There are but few Turks in Jerusalem, but they are the ruling class. The consuls divide with the pacha the government of the inhabitants—the foreign residents being under the consulates; the number being, or the proportion rather, in the following order: Austrian, German, Russian, American, English, French, Spanish, Greek, Italian, and Persian.

There are in Turkey some Christian provinces that ought, it seems to me, to be made independent, or placed under the protection of the Christian powers; but the majority of the people are Moslems, and must be governed by a theocratic government, either sultan or caliph. The solution of the Eastern question is far from a consummation. A nation, as a tree, is the growth of centuries, and it takes a nation a long time to die—Rome was three hundred years dying; and for two or for nearly three hundred years Turkey has made no territorial conquests.

Nothing seems more capricious nor is more natural than the distribution of population in Palestine—the plains neglected, as Esdraelon and the Jordan Valley, and the hill country and the mountains, as in Lebanon,

in Syria, and in Samaria near Nablous, and in Judea, densely populated, in some instances, in a high state of cultivation. The Bedouins have driven the inhabitants to take refuge in the hills, while they dominate in the valleys and the plains, the natural pasture grounds for their flocks. It is Mahamet Ali only who in modern times has attempted to restrain the lawless free-booters who carry off cattle, crops, and goods, devouring like locusts, and penetrating even to Acre and Gaza. There is a regiment of soldiers stationed at Gaza for the protection of the inhabitants, and almost every year soon after harvest the governor of Palestine is under the necessity of sending additional troops and heavy ordnance to repel the invaders on the southern border and to assist in maintaining order.

JEWISH COLONIZATION.

Sir Lawrence Oliphant has failed to obtain the signature of the Sultan to the irade authorizing the formation of a company for the purpose of colonizing the trans-Jordanic country with Jews, in consequence, it is said, of the Sultan's suspicion of all foreign proposals, though the plan had the approval of three of the former grand viziers, Khareddeen, Midhat, and Mahamed Nedein.

The plan seems to be a plausible one, but it is liable to two objections: the fact that the Jews are not agriculturists, and the fact that any colony beyond the Jordan would be exposed to the depredations of the Bedouins. The importance of Palestine in ancient times was from its relation to the Euphrates and the Nile, the seats of the great empires of antiquity; but the world—the commercial and the civilized world—has grown larger, and Assyria and Egypt are but grains of sand, mere spots on the map, and either or both of them might be blotted out or converted into another lake of death, and the shock of the convulsion would scarcely be felt at London or at New York. The routes of commerce have been changed, and the great commercial centers are London, Bombay, and New York. Not the camel and the caravan, but the ship and the steamer are now the carriers of the world; and not the Mediterranean Sea, but the Atlantic Ocean, is now the highway of the world's commerce.

In the future this must be mainly an agricultural country, and even this is limited by the natural and acquired inertia of the people, and by their traditional attachment to old forms and old implements and appliances. Their wants are few, their resources limited, their modes of culture rude and unproductive, and there is no promise of any large surplus for export in the near future. The taxes are irregular and capricious; besides there is the liability of forced loans. It is the incertitude of possession and of right, as well as the insecurity of life and of property, that discourages investment and restrains industry, enterprise, and thrift throughout Turkey.

EUROPEAN COLONIZATION.

European colonization has not been successful, either socially or financially. Besides the peril of acclimatization, there is especially trouble on account of the prejudice of the native population and the perplexity and delay in getting their land titles acknowledged and protected by the local authorities.

The Jewish experimental farm near Safed has been abandoned, and that near Jaffa does not pay running expenses. The American colony from the State of Maine, located near Jaffa some years ago, was a fail-

ure. The German colonists of Jaffa, Jerusalem, and Heifa are very nearly self-supporting, though many of them are subjected to very serious privations, and there is little in their history to encourage or to justify similar experiments.

The climate is not adapted to Europeans or Americans, especially if exposed to outdoor labor, and even for merchants, professional men, and missionaries it is depressing and enervating, so that a voyage to Europe is a necessity occasionally in order to maintain a comfortable degree of energy and health.

THE GARDENS OF JAFFA.

There are 400 gardens at Jaffa, averaging perhaps from 2 to 6 acres each, and the profits are about 6 per cent. on the investment and the expenses of culture—water, labor, harvesting, and marketing. Besides the home market, including Jerusalem and Nablous, the fruits are sent to Egypt and Southern Europe. Hebron, as of old, is famous for its vineyards, and for grapes worthy of the traditional reputation. This mountain region is favorable to the cultivation of the grape, and there is no good reason why the wines of Palestine should not enter largely into the commerce of the world and be as justly celebrated as are the wines of Cyprus or of France.

EXPORTS TO THE UNITED STATES.

Statement showing the value of declared exports from the consular district of Palestine to the United States during the year ending September 30, 1880.

JERUSALEM.

Articles.	Quarter ending—				Total for the year.
	December 31, 1879.	March 31, 1880.	June 30, 1880.	September 30, 1880.	
	<i>Francs.</i>	<i>Francs.</i>	<i>Francs.</i>	<i>Francs.</i>	<i>Francs.</i>
Fancy articles, as olive-wood work and mother of pearl, &c.....	361.65	1,177.90	420.50	.....	1,960.05
Total in United States gold.....	.....	.....	.....	.....	\$379 30

From the above statement of exports it appears that there is an increase of \$48.89 on the exports for the year ending September 30, 1878, and \$126.85 also more than the year ending September 30, 1879.

We might have had more exports of articles if it were not that the Bethlehemite people ship their goods first to France and Italy, and whatever remains from the sale they then ship to the United States. I know this for a certainty, because I have recently viséed six passports for the Bethlehem merchants who left for the United States via Europe with nearly 30 boxes of goods. These merchants return with American gold and a little idea of civilization, and begin to build new houses with European taste, and sometimes they bring with them American tools and other articles for house furniture. There are thirty new houses building at Bethlehem, which is the best town in all Palestine.

A great many of them at present are preparing more work for the coming exposition at New York in the year 1883.

J. G. WILLSON.

UNITED STATES CONSULATE,
Jerusalem, November, 1880.

AMERICAN AND BRITISH TRADE WITH SYRIA.

EXTRACT FROM THE ANNUAL REPORT FOR 1880 OF CONSUL EDGAR, OF BEIRUT.

The imports from the United States consisted solely of petroleum, of which 1,500,000 gallons were entered. Only one American vessel arrived during the year. The petroleum was brought chiefly in Austrian and Italian vessels, at an average cost for freight of 2 cents per gallon.

The exports to the United States were washed and unwashed wools, of a low grade, for the Boston and Philadelphia markets. I am pleased to be able to state that more wool was exported to the United States during the past year than in the previous five years.

The imports of English gray, bleached, and printed cottons, and of cotton yarn, to serve as the warp of the various native cloths, were somewhat greater than in the previous year. Some coal and iron, but very little hardware, were imported from England. The imports from England are brought in large steamers to Alexandria, and thence distributed along the Syrian coast in small English steamers. The value of English cottons thus imported exceeds in amount that of any other article, running up to many millions of dollars annually. I have repeatedly called the attention of the Department of State to the fact that our American cotton manufacturers can compete with the English in this trade in but one way, namely, by the establishment of an American house in Beirut, which house could act as an agent for other American manufacturers, importing goods partly in petroleum vessels and exporting wool, rags, and olive-oil in the returning vessels. No satisfactory trade can be established through local agents, or the consignment of goods to present firms, all of which are interested in the sale of other goods.

The superior quality of American cottons is fully recognized here, and if a sufficient stock of suitable quality and variety were kept on hand and offered for sale at a small profit, I have no doubt that in a short time, by the exercise of a little patience, we could divide this vast trade with the English.

No *cash* sales can be made. The usual time given by Manchester is from 60 to 120 days. No articles of American manufacture, except petroleum and cottons and cotton yarns, could be sold in large quantity, but American canned goods of all kinds, agricultural implements, sewing-machines, clocks, lamps, hardware, fire-arms, would have a ready sale.

JOHN T. EDGAR, *Consul*.

UNITED STATES CONSULATE,
Beirut, October 15, 1880.

AUSTRALASIA.

TARIFF OF VICTORIA, AUSTRALIA.

[Transmitted to the Department of State by the consul-general of the United States at Melbourne.]

IMPORTED BY LAND OR SEA.

Articles.	Rate of duty.
Almonds, shelled	2d. per pint or pound, or reputed package of that quantity or weight, and so in proportion for any such reputed quantity or weight.
Arrowroot	
Confectionery, comfits, succades, sweetmeats	
Fruits, vegetables, dried or preserved	
Fruits, boiled	
Honey	
Jams	
Jellies	
Macaroni	
Maize flour or corn flour	
Maizena	
Meats and fish, preserved, not salted or dried or preserved in brine	
Meats, potted	
Spices, ground	
Sugar candy	
Vermicelli	
Almonds	2d. per pound.
Bacon	Do.
Biscuits	Do.
Blue	Do.
Butter	Do.
Candles	Do.
Cheese	Do.
Curled hair	Do.
Glue	Do.
Hams	Do.
Mustard	Do.
Nuts (except cocoanuts)	Do.
Starch	Do.
Stearine	Do.
Soap:	
Perfumed and toilet	4d. per pound.
Other	2d. per pound.
Acetic acid	3d. per pint or pound.
Acid:	
Sulphuric	5s. per cwt.
Muratic	Do.
Nitric	Do.
Ale, porter, spruce and other beer, cider, and perry:	
For six reputed quart bottles, or for twelve reputed pint bottles	9d.
In wood or in bottles containing an imperial quart or pint, respectively	9d. per gallon
Axles:	
Common dry, with linchpins	25 per cent. ad valorem.
Common nut, and others not enumerated, up to 1½-inch diameter, inclusive	3s. per arm.
Above 1½-inch diameter, inclusive	4s. 6d. per arm.
Mail, patent, up to 1½-inch diameter, inclusive	4s. 6d. per arm.
Above 1½ inch	7s. per arm.
Other patent axles, with brass caps	10s. per arm.
Bags and sacks:	
Corn and flour	1s. per dozen.
All other (except gummies and sugar mats)	6d. per dozen.
Boots and shoes—Prosent English sizes to be the standard (except children's, Nos. 0 to 3), viz:	
Men's No. 6 and upwards	33s. per dozen pairs.
Youths', Nos. 2 to 5	21s. per dozen pairs.
Boys', Nos. 7 to 1	17s. 6d. per dozen pairs.
Women's, No. 3 and upwards	19s. 6d. per dozen pairs.
Girls', Nos. 11 to 2	16s. per dozen pairs.
Girls', Nos. 7 to 10	11s. 6d. per dozen pairs.
Children's, Nos. 4 to 6, and slippers	6s. per dozen pairs.
Women's "lasting" and "staid" boots	1s. per dozen pairs.
Goloshes of all kinds	4s. per dozen pairs.
Slippers, men's, women's, and children's, from No. 7 and upwards	9s. per dozen pairs.
Bottles containing pickles	3d. per dozen.

TARIFF OF VICTORIA—Continued.

Articles.	Rate of duty.
Bricks, fire	20s. per 1,000.
Cards, playing	3s. per dozen packs.
Carriages (including second hand) and carts (see exemption list): All carts and wagons without springs, and spring carts and spring drays with two wheels.	20 per cent. ad valorem.
Tilburys, dog-carts, gigs, Boston chaises, and other two-wheeled vehicles on springs or thorough braces.	£10 each.
Express wagons and wagons for carrying goods, and single or double seated wagons, and four-wheeled buggies without tops, mounted on springs or thorough braces.	£15 each.
Hansom safety cabs, single and double seated wagons, wagonettes, and four-wheeled buggies with tops.	£20 each.
Omnibuses and coaches for carrying mails or passengers.	£40 each.
Barouches, Broughams, mail phaetons, drags, and other carriages not otherwise enumerated.	£50 each.
NOTE.—Any separate parts of carriages not specially enumerated as dutiable or free are chargeable with such duty as the commissioner may determine under section 7 of <i>Duties of Customs Act 1879</i> .	
China-ware and porcelain (except photographic and telegraphic materials)	2s. 6d. per cubic foot.
Cigars	5s. per pound.
Coffee, chicory, chocolate, cocoa	3d. per pound.
Cordage, viz:	
Coir rope	5s. per cwt.
Kempen and other cordage (except of galvanized and other iron and steel cordage), including all housing and seizing lines and spun-yarn.	11s. 3d. per cwt.
White lines and other descriptions of cordage not otherwise specified (except coir yarn).	28s. per cwt.
Corks, cut	4d. per pound.
Doors, wooden	5s. each.
Drugs:	
Acid, carbolic	6d. per gallon.
Acid, carbolic, pure	6d. per pound.
Acid, oxalic	2d. per pound.
Acid, picric	3d. per pound.
Aloes	12s. per cwt.
Ammonia, carbonate of	2d. per pound.
Ammonia, liquid	Do.
Cannabis Indica	1d. per pound.
Chlorodyne	1s. 4d. per pound.
Cocculus Indicus	1s. 6d. per cwt.
Faba amara	Do.
Gelatine	6d. per pound.
Glycerine, pure	3d. per pound.
Glycerine, crude	1d. per pound.
Grains of Paradise or Guinea grains	2s. per cwt.
Morphia	1s. 6d. per ounce.
Nitrate of silver	6d. per ounce.
Nux vomica	1s. 6d. per cwt.
Potassium, iodide of	10d. per pound.
Potassium, bromide of	3d. per pound.
Quassia	40s. per ton.
Strychnine	1s. per ounce.
Dynamite	4d. per pound.
Earthenware (except photographic and telegraphic materials)	1s. 4d. per cubic foot.
Felt hoods, pullover hoods, and any article of felt prepared for the manufacture of hats.	5s. per dozen.
Fruit, green	9d. per bushel.
Fuse	1½d. per coil of 24 feet or less, and in proportion for any greater quantity.
Glass or stone bottles containing a reputed quart or any less quantity of spirits (not perfumed), wine, ale, porter, or other beer, and bottles containing aerated or mineral waters.	6d. per dozen.
Bottles containing pickles.	3d. per dozen.
Glassware, except locket, brooch, and watch-glasses, and optical, surgical, and scientific instruments, and photographic and telegraphic materials:	
Glass bottles for aerated waters and medicines	6d. per cubic foot.
Chimneys, shades, and globes, and all other glassware not being cut, engraved, etched, or ground.	1s. per cubic foot.
Glass shades and globes, and other glassware, cut, engraved, etched, or ground.	2s. 6d. per cubic foot.
Grain and pulse of every kind not otherwise enumerated	1s. per 100 pounds.
Barley	2s. per 100 pounds.
Maize	6d. per 100 pounds.
Grain and pulse of every kind not otherwise enumerated, when prepared, ground, or in any way manufactured.	2s. per 100 pounds.
Gun-cotton, or other material used for exploding purposes not otherwise specified.	5s. per pound.

TARIFF OF VICTORIA—Continued.

Articles.	Rate of duty.
Hats (except those warehoused without payment of duty on the first entry thereof before 4th September, 1879, which hats shall be still liable to the duties then chargeable), as under, that is to say:	
Hats (except straw, chip, willow, tape, and braid, untrimmed), not otherwise enumerated (on and after 4th September, 1879).	25 per cent. ad valorem.
Boys', youths', and men's hats, with a calico or other foundation or frame, and covered with felt, plush, silk, merino, velvet, or other material (unless otherwise specified, on and after 4th September, 1879).	30s. per dozen.
Hats known as dress hats (on and after 4th September, 1879).	48s. per dozen.
Boys' and youths' felt hats in sizes up to and including 6½ (on and after 4th September, 1879).	8s. per dozen.
Men's felt hats and women's untrimmed felt hats of any size, and pith hats (on and after 4th September, 1879).	15s. per dozen.
Hops	6d. per pound.
Ink, printing, colored	Do.
Jewelry (except cameos and precious stones unset), viz:	
Rings of gold, finished or unfinished, but without cameos or precious stones set therein.	4s. per pwt. troy.
All other jewelry of gold, unfinished, mounted, or in parts, but without cameos or precious stones set therein, not otherwise specified.	3s. per pwt. troy.
Chains of gold, unfinished (except machine-made chains for fringes).	1s. per pwt. troy.
All other jewelry, whether manufactured wholly or in part, not otherwise enumerated.	20 per cent. ad valorem.
Jute piece goods:	
Not exceeding 3 feet in width	½d. per yard.
Exceeding 3 feet in width	¾d. per yard.
Lead:	
Sheet and piping	2s. 6d. per cwt.
Lithofractor	4d. per pound.
Live stock:	
Cows, oxen, heifers, bulls, steers, calves over six months old (except working bullocks in teams).	5s. each.
Horses, mares, geldings, colts, and fillies not in saddle or harness.	Do.
Sheep, whether rams, ewes, wethers, or lambs.	6d. each.
Pigs.	2s. each.
Malt	3s. per bushel.
Matches and vestas:	
Wooden matches—	
For every gross of boxes containing in each box 100 matches or under.	6d.
For every gross of boxes containing in each box over 100 and not exceeding 200 matches.	1s.
And so on per gross of boxes for each additional 100 matches or part thereof.	6d. additional.
Wax vestas—	
For every gross of metal boxes, not otherwise specified, containing in each box 100 vestas or under.	1s. 3d.
For every gross of metal boxes, not otherwise specified, containing in each box over 100 and not exceeding 200 vestas.	2s. 6d.
And so on per gross of metal boxes for each additional 100 vestas or part thereof.	1s. 3d. additional.
For every gross of paper, small round tin, or other boxes containing in each box 100 vestas or under.	1s.
For every gross of paper, small round tin, or other boxes containing in each box over 100 and not exceeding 200 vestas.	2s.
And so on per gross of boxes for each additional 100 vestas or part thereof.	1s. additional.
Nails:	
Iron (except for trunks and grindery)	3s. per cwt.
Horseshoe	12s. per cwt.
Oatmeal	3s. per 100 pounds.
Oils:	
Mineral, refined, of which the point of ignition is above 80° Fahr., Colza and Olive, in bulk.	6d. per gallon.
Including castor or cod liver when refined or for medicinal purposes, in bottles of a quart or less than a quart.	Quarts, 2s. per dozen; pints, 1s. per dozen; half pints and smaller sizes, 6d. per dozen.
Onions	20s. per ton.
Opium, including all goods, wares, and merchandise mixed or saturated with opium, or with any preparation or solution thereof, or steeped therein, respectively.	20s. per pound.
Paddy	2s. per 100 pounds.
Paints:	
Ground in oil	40s. per ton.
Mixed ready for use	80s. per ton.

TARIFF OF VICTORIA—Continued.

Articles.	Rate of duty.
Paper:	
Note, letter, writing, fancy, and blotting, with cut edges.	2d. per pound.
Uncut—blotting, surface, drawing, and other papers (except printing and writing, in original wrappers and uncut edges, as it leaves the mill, paper-hangings, card-board, and mill-board).	4s. per cwt.
Bags	10s. per cwt.
Pearl and Scotch barley	5s. per 100 pounds.
Pickles	Quarts, 2s. 9d. per dozen; pints, 1s. 9d. per dozen; half pints and smaller sizes, 1s. per dozen.
Pipes:	
Cast-iron—flanged, spigot, and faucet, knees and elbows	40s. per ton.
Smoking, wooden	12s. per gross.
Clay, meerschaum	25 per cent. ad valorem.
Plate of gold	8s. per ounce, troy.
Plate of silver	2s. per ounce, troy.
Potatoes	10s. per ton.
Powder:	
Sporting (except fine powder imported in packages containing in bulk not less than 25 pounds' weight each).	3d. per pound.
Blasting	1d. per pound.
Provisions—including vegetables—salted, dried, or preserved in brine (except fish not otherwise enumerated).	5s. per cwt.
Rice	6s. per 100 pounds.
Saddle-trees:	
Riding	20s. per dozen.
Harness	10s. per dozen.
Salt (except rock salt)	20s. per ton.
Shot	1d. per pound.
Snuff	2s. per pound.
Soda crystals	40s. per ton.
Spirits or strong water of any strength not exceeding the strength of proof by Sykes' hydrometer, and so in proportion for any greater strength than the strength of proof.	10s. per gallon, or 40s. for each reputed 4-gallon case, or 20s. for each reputed 2-gallon case, when the said cases respectively do not contain more than the reputed contents, and so on for each reputed gallon or part of a gallon.
Spirits, cordials, liquors, or strong waters, sweetened or mixed with any article so that the degree of strength cannot be ascertained by Sykes' hydrometer (including all alcohol diluted or undiluted with water or other menstrum, and containing in solution any essence, essential oil, ether, or other flavoring or other substance, whether of natural or artificial origin).	10s. per gallon.
Spirits:	
Perfumed	20s. per gallon.
Methylated	1s. per liquid gallon.
Sugar and molasses (except unrefined molasses)	3s. per cwt.
Tea	3d. per pound.
Timber:	
Dressed or planed	1s. 6d. per 100 sq. feet.
Hard-wood, undressed (except undressed logs of any length of the size of 9 inches square or larger).	1s. per 100 sq. feet.
Laths	1s. per 1,000.
Shingles	9d. per 1,000.
Palings	9d. per 100.
Rough spokes and felloes (except hickory) and sawed pickets.	6d. per 100.
Tobacco (except sheep-wash, including tobacco soaked on the landing thereof from the importing ship, or on delivery from the warehouse, in turpentine, oil, or other fluid, in the presence of some officer of customs, so as to render it unfit and useless for human consumption):	
Manufactured	2s. per pound.
Unmanufactured	1d. per pound.
Twine (except sewing or seaming of hemp, cotton, or flax)	13d. per pound.
Umbrellas, parasols, and sunshades:	
Parasols and sunshades (plain) up to 18½ inches in length of ribs, including covers made up wholly or in part of cotton, woolen, or other material, not otherwise specified.	6d. each.
Umbrellas over 18½ inches, fancy parasols or sunshades under 18½ inches in length of ribs, including covers made up wholly or in part of cotton, woolen, or other material, not otherwise specified.	1s. each.
Umbrellas over 18½ inches in length of ribs, of silk or silk mixtures, and parasols and sunshades of all sizes of similar materials, including covers made up wholly or in part.	2s. 6d. each.
Varnish, including lithographic	2s. per gallon.
Vinegar, not being acetic acid or crude vinegar, aromatic, or raspberry.	6d. per gallon.
Window sashes	2s. per pair.

TARIFF OF VICTORIA—Continued.

Articles.	Rate of duty.
Wine:	
Sparkling	8s. per gallon.
Other	6s. per gallon.
Woolpacks	7s. per dozen.
Articles of apparel, whether wholly or partly made up (except hosiery):	25 per cent. ad valorem.
Aprons, breeches, coats, capes, cloaks, costumes, collars, cuffs, sleeves and sets, crinolines, camisoles, dresses, furs made up, frocks, fronts, infants' hoods and hats, infants' swatches and bibs, jackets, knickerbocker suits or portions of suits, leggings, mantles, muslin and net scarfs, nightdresses, pants, pelisses, petticoats, pinafores, ruffles, robes, shirts of all kinds, skirts, stays, shawls, trousers, tunics, vests, wristbands, men's, women's, and children's underclothing, ties, scarfs, neckerchiefs, and all articles used for the like purpose.	
Articles of artificial human hair manufactured, viz: Head dresses, hair plaits, hair plait stems, side pads, chignons.	25 per cent. ad valorem.
Bonnets (except straw, chip, willow, tape, and braid, untrimmed)	Do.
Brushware (except artists' brushes)	Do.
Caps	Do.
Copperware, not otherwise enumerated	Do.
Frilling and ruffling	Do.
Furniture, including second-hand furniture (see exemption list)	Do.
Boilers (land and marine)	Do.
Machinery, not otherwise enumerated (except machinery for carding, spinning, weaving, and finishing the manufacture of fibrous material, and cards for such machinery, sewing and printing machines and presses, machinery used in the manufacture of paper and for felting, including wire-cloth and felts, and machines for telegraphic purposes, and engines of which gas is the direct motive power).	Do.
Manufactures of metals (except steel cranks and tires in the rough, and patent roller bushes for block making) as under, viz: Air gratings; ash pans; axle blocks; axle boxes; barrow wheels; bedsteads; bells; bench screws; bill files; blacksmiths' tongs; blank nuts; boat-hooks; boilers and furnaces, copper; bolts and nuts, iron; bolt ends, iron; bolt rings; bottle jacks, lifting; braces, wrought-iron; branch pipes, copper and brass; brass cocks, valves, and whistles; brass mountings and fittings; brazed copper pipes; brazed wrought-iron pipes; cake rollers; camp ovens and three-leg pots; cast iron of all sorts, molded; cast-iron cylinders; cast-steel drills; casterns, wrought-iron; coal scoops and scuttles; condensers for gasworks, salt water, and steam-engines; contractors' forgings; cork drawers, wire and steel; crow-bars; crucibles, black lead; dampers and frames; distilling apparatus; door knockers; door porters; door scrapers; drain grates and frames; drain gratings; dumb-bells; eccentrics for buggies; engine castings; engineers' forgings; fenders; fire-dogs; fire guards; fittings for pumps, engines, and machinery; flower stands; forge backs; furnace doors and frames; furnace pans, galvanized; galvanized and black spouting and guttering; galvanized buckets and tubs; garden reels; garden rollers; garden seats; gasaliers and chandeliers; all kinds of finished work for gas fittings; gas stoves; gas tongs; girders, iron; grates; griddles; grindstone spindles; gun metal, steam-engine fittings, molded; gutters and piping; hammers; napping, quartz, and spalling; hasps and staples; hat and coat hooks, cast iron; hat-stands; hay-rakes; hinges, T; holdfasts; hook-and-eye hinges; horse-power gear; horse-rakes; horseshoes; hydraulic mains; iron brackets; iron kettle ears; iron work for wagons, carriages, carts, and buggies; Japanned and lacquered ware; kettles and preserving pans, copper and brass; kitchen ranges; ladles; lamp post; leaden ware; letters and figures, wrought-iron or steel; levers, forged; links, connecting or split; lifts, warehouse; manger rings; mangles; marine engine cranks and pillars; maul rings; meat hooks; monkeys for pile driving; ornamental gratings; oven doors and frames; painted and brass cases for engines; pepper, malt, bean, and oat mills; picks and mattocks; pipes, wrought-iron (except welded); plyers; portable forges; pulley blocks; pumps; quarry mauls and picks; quoits; railway chairs; range cocks; rings and starts; rivets, iron; rods, connecting; sack trucks; safes and boxes, iron; sash weights; shafting, bright wrought iron; sluice valves, iron; soldering-irons; springs and scrolls, cart, carriage, and buggy; stands, iron; stationary or portable engines, or parts of them; stretch traps; tinned ware and iron ware, stamped; tin ware; troughs; truck wheels; tue irons, cast and water; union joints; washers, black and galvanized; wedges; wheelbarrows, wrought-iron; wheels, wrought-iron; winches; wire netting; wire work; zinc ware, including perforated zinc.	Do.
Mats	Do.
Medicines, patent or called patent, not containing spirits, being medicinal preparations or compositions recommended to the public as proprietary medicines, or prepared according to some private formula or secret art, as remedies or specifics for any disease or diseases or affections whatever affecting the human or animal body, or being subject to a stamp duty in the country from whence they are exported.	Do.

TARIFF OF VICTORIA—Continued.

Articles.	Rate of duty.
Musical instruments (including second hand), being pianofortes, organs, and all parts thereof, and harmoniums, including pianoforte actions made up (except action-work in separate pieces, including rails and keys).	25 per cent. ad valorem.
Paper and cardboard boxes (not containing goods ordinarily imported therein).	Do.
Platings of all kinds	Do.
Enchings	Do.
Saddles and harness, leatherware or articles made up of leather, or any manufacture of which leather is the most valuable part, including whips of any description, and trunks and portmanteaus.	Do.
Wickerware	Do.
Woodenware, including bellows, picture frames, and wooden hames, turnery (except billiard balls in the rough); staves, shaped or dressed, and casks, and finished timber not otherwise enumerated (except artists' materials, engravers' boxwood, shafts and poles in the rough, ash oars, gilt moldings and beadings used in the manufacture of picture frames of wood or other materials, but not ornamental composition moldings in the white, not gilt).	Do.
Agricultural implements (see exemption list)	20 per cent. ad valorem.
Blacking	Do.
Brownware and tiles	Do.
Carpeting and drugginging	Do.
Clocks	Do.
Fireworks	Do.
Furniture oil and paste	Do.
Gloves	Do.
Ground coal and charcoal (see exemption list)	Do.
Hosiery (except of cotton, linen, and elastic silk stockings for surgical purposes or otherwise specified).	Do.
Leather:	
Calf and kid	7½ per cent. ad valorem.
Patent and colored fancy leathers	10 per cent. ad valorem.
All other leathers (except crust or rough-tanned hog-skins, calf and goat and sumac-tanned sheep).	20 per cent. ad valorem.
Cut into shapes, including elastic side uppers and Wellington legs, clogs and pattens.	Do.
Manufactured stationery, including account-books, printed checks, bill-heads, and other printed or ruled paper, blotting-pads, sketch-blocks, manifold writers, albums, and all kinds of jewel, dressing, and writing cases (excepting pens, penholders, pencils, pencil-cases, and slates).	Do.
Marble and stone, wrought (except slate slabs not wholly manufactured, lithographic stones, and stones for milling and grinding purposes).	Do.
Matting of all kinds	Do.
Oilcloths and other floor cloths	Do.
Oilmen's stores (except essential oils and essences not containing alcohol), packed in bottles, jars, canisters, or vessels not exceeding one reputed quart in size.	Do.
Plated and mixed metal ware (except door-handles, locks, shaft-tips, stump and finger joints, and slot irons used in carriage building, harness mountings, and plated hames).	Do.
Silks:	
All manufactures containing silk (except pongees, hatters' silk plush, umbrella silk, silk for flour dressing, silk fags, oil silk, fringes, tassels, and gimp for furniture, reps, damasks, and other material for covering furniture).	Do.
Silks in the piece known as pongees.	10 per cent. ad valorem.
Tents and tarpaulins	20 per cent. ad valorem.
Washing, baking, and Seidlitz powders	Do.
Watches	Do.
Woolen blankets or blanketing, rugs and rugging	Do.
Woolen piece-goods, being vestings, trouserings, coatings, and shirtings, containing wool; broadcloths, witneys, naps, and flannels.	15 per cent. ad valorem
All dress piece-goods containing wool	7½ per cent. ad valorem.
Aerated or mineral waters	10 per cent. ad valorem.
Combs	Do.
Gold and silver leaf	Do.
Grease, anti-friction	Do.
Oilmen's stores not otherwise enumerated (except isinglass, uncut)	Do.
Perfumery	Do.
Seeds, canary	Do.
Springs, sofa, chair, and other furniture	Do.
Types, brass, type-holders, ornamental rolls and line fillets, for bookbinders.	Do.

EXPORTED BY LAND AND SEA.

Timber, known as redgum (on and after September 1, 1880)	10s. per 100 sup. ft.
Scrap iron (on and after November 15, 1877)	23 per ton.

ARTICLES EXEMPT FROM DUTY.

The undermentioned articles shall be exempt from duties of customs on importation into Victoria by land or sea, namely: All minor articles of mixed or undescribed materials used in the making up of apparel, or of boots and shoes, or of hats, or of saddlery, or of umbrellas, or of parasols, or of sunshades, and all surgical instruments or appliances, provided that such minor articles or surgical instruments or appliances are enumerated in any order of the commissioner, and published in the Government Gazette; all packages, second-hand, in which ships' stores have been imported; all packages in which goods are ordinarily imported, not otherwise enumerated; ships' fittings; passengers' baggage, being cabin furniture and personal luggage; and second-hand furniture accompanying any passenger which has been in such passenger's own use, up to fifty pounds in value, and which is not imported for sale; ground animal charcoal; all carriages and other vehicles used in the conveyance of passengers or goods across the frontier which have been registered with the officers of customs nearest the place where such carriage or other vehicle may ply or pass, and in such manner as the commissioner may by any order from time to time approve; works of art; fresh olives and candle nuts; and, from the thirtieth day of July, one thousand eight hundred and seventy-nine, until the thirtieth day of June, one thousand eight hundred and eighty, inclusive, agricultural instruments known as reapers and binders.

PETER LALOR,

*Commissioner of Trade and Customs.*DEPARTMENT OF TRADE AND CUSTOMS,
December 18, 1879.

NEW ZEALAND: ITS COMMERCE, RESOURCES, AND INDUSTRIES.

REPORT BY CONSUL GRIFFIN, OF AUCKLAND.

The colony of New Zealand is one of the most interesting and prosperous in the British dominions. It consists of three islands, known as the North Island, the Middle Island, and the South Island, lying in the Pacific Ocean, between the parallels $34^{\circ} 15'$ and $47^{\circ} 30'$ south latitude, and between the meridians 166° and 179° east longitude. They are about 6,000 miles sail from San Francisco, and about 13,000 from London.

The total area is 101,000 square miles, forming an extent of country greater than that of England and Scotland put together, and nearly equal in size to the peninsula of Italy.

The North Island is 500 miles in length, and varies from 6 to 300 miles in breadth. The Middle (or Stewart's) Island is only about 36 miles long, and is triangular in form.

The South Island is 550 miles in length, with an average breadth of 120 miles. Cook's Strait separates the north from the Middle Island, and Fovreang's Strait separates the Middle Island from the South Island. The narrowest parts of these straits are from 12 to 18 miles.

About one-tenth of the surface of the North Island is covered with mountains, but they do not reach as great a height as those on the South Island, where they attain an altitude of over 14,000 feet. These mountains are called Alps, and their tops are perpetually covered with snow.

Mild shocks of earthquakes are felt, but they cause little or no alarm. Mount Egmont, an extinct volcano, is 8,300 feet high. It is surrounded by the most fertile districts in New Zealand. The mountains of the South Island are open and well grassed and used for pastoral purposes.

MINERAL WEALTH.

Alluvial gold is found principally in the provinces of Otago, Westland, and Nelson. Mining operations are carried on over an area of 20,000 square miles. Silver, copper, mercury, lead, tin, and manganese have been discovered.

Coal exists in great abundance. It is of two kinds, black and brown coal. The latter is unfit for manufacturing purposes or for the use of steamships, and is but a poor article at best for domestic consumption.

The black-coal seams are found chiefly on the west coast. The rivers of New Zealand are navigable, but only for boats of moderate size, and the people have to depend chiefly upon the railways for the transportation of coal. The government has control of the coal fields, as also of all the public works of the colony. These fields are subdivided and let to companies upon favorable terms.

Petroleum is also found in various parts of the colony, and is said to yield about 65 per cent. of commercial kerosene, but in truth the people depend on the United States for a supply of this article.

I append below a table of the imports, exports, and shipping.

The imports of the colony for the year 1878 amounted to £8,755,663 against £6,973,418 in 1877. The imports in the first six months of 1879 were valued at £4,347,916 against £3,899,564 for the corresponding period of 1878.

The exports from New Zealand for 1878 amounted to £6,015,525 as compared with £6,327,472 in 1877. The total exports for the first six months of 1879 were £3,748,257 against £3,582,592 in the corresponding six months of 1878. The principal articles of export in the half year ending June 30, 1879, were: Wool, value, £2,293,451; gold, £529,790; wheat, £416,828; oats, £71,404; barley, £24,056; tallow, £137,454; kauri gum, £66,498; rabbit skins, £24,453; preserved meats, £17,745.

The shipping arrivals in New Zealand during 1878 and the year preceding are shown in the following comparative return:

Years.	British.		Foreign.	
	Vessels.	Tons.	Vessels.	Tons.
1878.....	852	394,950	74	61,540
1877.....	745	323,974	67	64,549

Of the total arrivals in 1878, 914 brought cargoes and 12 came in ballast.

CLEARED OUTWARDS.

Years.	British.		Foreign.	
	Vessels.	Tons.	Vessels.	Tons.
1878.....	816	370,208	70	58,285
1877.....	779	335,467	69	65,142

Of the gross departures, 542 took cargoes and 344 went in ballast.

During the six months ending June 30, 1879, the entries inwards at the four principal shipping ports of the colony were as follows:

Ports.	Vessels.	Tonnage.	Crews.
Auckland.....	89	57,631	2,334
Wellington.....	76	41,735	1,230
Lyttelton.....	104	52,028	1,420
Dunedin.....	80	49,054	1,266

THE POPULATION.

The local white population of the colony can be safely set down at 412,000. In the year 1852, when the Imperial Parliament approved of

a constitution for New Zealand, the population was only 27,000; in 1856 it was 45,000; in 1866 it increased to 214,114. The cause of this rapid growth was the development of the gold mines of the colony.

EDUCATION.

The people of New Zealand take great interest in the subject of education, and there is no other tax which they more readily vote for than that for educational purposes. The following is a correct statement of the expense of education in the colony:

	£	s.	d.
Liabilities on January 1, 1878.....	4,065	14	11
Expenses of management by boards.....	10,225	12	2
Inspection of schools and teachers' examinations.....	6,142	12	5
Maintenance: Teachers' salaries and allowances, grants to committees, scholarships, training of teachers, insurance, &c.....	191,499	15	5
School buildings.....	90,491	17	9
Refunds, and sundry extraordinary payments.....	4,254	2	1
Total expenditure for year.....	306,679	16	9
Balance in hand December 31, 1878.....	61,605	19	3
	368,285	16	0

The total number of children between the ages of 5 and 15 is 105,208, of whom 62,866 are represented on the public school rolls. About 15,000 attend private schools and about 10,000 receive instruction at home.

THE MAORI RACE.

The population of Maori or native race is variously estimated from 30,000 to 80,000. The former number approaches nearer a correct estimate than the latter. It is certain that the number of natives is becoming smaller every year, and in time they will disappear from the country. They resemble the Samoans in character and complexion. They had no written language of their own, and, of course, are ignorant of their origin. The missionaries have, however, reduced their language to writing, and the Bible and a number of other books have been translated into the Maori dialect.

They are alternately brave and treacherous, and are superstitious in the extreme. They abhor work, but delight in hunting and fishing. They have good memories, but little or no powers of reasoning. They pride themselves on their oratory, and have an easy flow of language. They excel, perhaps, all the other inhabitants of the South Sea Islands in tattooing their faces and bodies. They cannot be persuaded to discontinue this barbarous practice. Many reasons are assigned for it. Some say that they honor it because it is one of their ancient customs. Others tell me that they thus mark themselves in order to look fierce in battle. A stately looking chief once informed me that he tattooed himself because he wanted to conceal his age. "To tell the truth," said he, "I wish to appear young," and as far as I could judge he did appear young. They have no word for gratitude in their language, but are hospitable to strangers and generous to their kindred. They acquire all the vices of the whites, and but few of their virtues. They are fond of fighting among themselves, and would gladly practice cannibalism if it were not for the restraining influence of the British Government and the abundance of pigs and other animal food in the islands. They

are slow and heavy in their movements, deliberate in speech, and filthy in their persons and habits. They possess some imitative genius, but are infinitely below the other savage races in this respect. They have a great aversion to wearing clothes and defy every effort made to civilize them. There is little in their ancient religion or mythology to commend it. The Maories are now and have been for many years nominally Christians. In 1864 there was a revival of their old superstitions mixed with a creed perverted from the Bible; this religion was called "Han-han". It spread rapidly throughout the country, and the missionaries lost their influence over the natives, but soon afterward regained it.

The Maories complain bitterly of the action of the government in confiscating their lands for rebellion. They still hold about 14,000,000 acres.

LAND LAWS.

There is not now, as formerly, much difficulty in receiving titles to land. All the waste lands of the crown within each provincial district are managed by a board consisting of the waste-lands commissioner, chairman, and five other commissioners, appointed by the governor. The homestead system, as amended in the session of 1879, is as follows:

HOMESTEAD SYSTEM—FREE GRANTS.

Provision is made under the act for free selection of homestead grants. Blocks are specially set apart for the purpose. The lands so dealt with are divided into first-class lands and second-class lands, according to quality, and are so marked upon the government plans. The area allowed each person of the age of eighteen years or upwards is, of first-class lands 50 acres, or of second-class 75 acres; for persons under eighteen years of age, of first-class lands 20 acres, or of second-class lands 36 acres. For each block a district surveyor or other duly authorized officer is appointed, and intending settlers must lodge a written application with him between the hours of 10 a. m. and 4 p. m., such application to state names and ages of the applicants, and describe the situation, class of land, and number of acres they have taken possession of, together with the date whereon they took possession; also to whom it is intended that a grant or grants shall issue upon fulfillment of the conditions of selections; and no application shall be received for a less area than 20 acres, and not more than 200 acres of first-class or 300 acres of second-class lands can be held or occupied by any number of persons living together in one household. The land will be allotted according to priority of application; but when two or more applications are received at the same time, the ownership must be decided by lot. Every selection must, so far as the features of the country will permit, be of a rectangular form, and when fronting on a road, river, lake, or coast, be of a depth not less than three times the length of the frontage—no selection to monopolize the wood or water or landing-place in any particular locality.

Under special circumstances the waste-lands commissioner may permit occupants to complete their selections by the purchase of adjoining lands in blocks of irregular shape and small extent. Every selector of land shall have the same surveyed at his own expense by a duly authorized surveyor, and deliver at the waste-lands office, within six months after taking possession, a correct certified plan. Only the sanction of the

commissioner is necessary until the conditions on which the selection is made have been finally completed. At the end of the period of five years a grant or grants shall issue for the lands selected, provided the selector has not forfeited his right thereto. The conditions to entitle to Crown grant or conveyance are: Continuous residence on the land for five years; the erection of a permanent dwelling-house, value £50, within twelve months from the commencement of such residence; annual cultivation of one-fifteenth of area selected, if open land, or one-twenty-fifth if bush land, together with the fulfillment of conditions imposed by the act and regulations.

Surveys.—All surveys shall be made by surveyors authorized by the surveyor-general, and in accordance with instructions to settlement surveyors issued, not exceeding 30 acres, £5; exceeding 30 and up to 50 acres, 3s. per acre; exceeding 50 and up to 100 acres, 2s. 6d. per acre; exceeding 100 and up to 200 acres, 2s. per acre, but not less than £12 10s.; exceeding 200 and up to 300 acres, 1s. 8d. per acre, but not less than £20.

Whenever two or more sections are surveyed together by the same surveyor, one-third of the above rates shall be deducted from all areas above 50 acres, and whenever all or more than one-half the length of the boundary lines shall run through vegetation less than six feet high, one-third of the schedule rates shall be deducted.

Further information as to regulations and conditions may be obtained from the commissioner of Crown lands, Auckland, or any district surveyor or district land agent. Plans of the blocks open may also be seen at the waste-lands office, Auckland.

LICENSES FOR CUTTING TIMBER, FLAX, AND OTHER PURPOSES.

Licenses to occupy Crown lands for any period not exceeding seven years may, upon application to the board, be obtained for cutting timber or flax, raising coal, removal of clay, sand, gravel, or stone, digging kauri gum, sites for saw-mills, flour mills, tanneries, fellmongers' yards, slaughter-yards, brick kilns, potteries, ferries, jetties, sites in thinly inhabited districts for inns and accommodation houses. Area of land and fee to be fixed by board.

SPECIAL SETTLEMENTS.

The governor sets apart blocks of rural land, and declares the same open for special settlement, but the total quantity of land so set apart in the colony is not allowed to exceed 100,000 acres in any one year. Lands so set apart are sold at a price to be fixed by competent valuers, not being less than one pound per acre. A deposit of one-tenth of the price of the block is payable, in manner directed by the governor, within three months after deposit of survey plan with chief surveyor. Conditions of improvements to be defined by regulations are necessary to be performed before issue of Crown grant. Special settlement lands cannot be set aside as such for a longer period than seven years, and if not taken up within that time may be declared open to all purchasers as ordinary Crown lands. The governor is empowered to contract with persons or companies agreeing to promote the settlement of persons upon such lands, and the person or companies so contracted with are bound to perform and observe the terms agreed upon. Rebate in the

prices of land is allowed in respect of adult persons introduced from the United Kingdom, but the total rebate is not to exceed twenty pounds for each statute adult, and no rebate is made until the governor is satisfied that a number of adults have settled on the land and improved the same in conformity with the regulations.

THE GOVERNMENT.

The Government of New Zealand is like that of nearly all the British colonies. It consists of a legislative council appointed by the Crown for life, and a house of representatives, which now contains 86 members, elected for three years. Executive power is vested in the governor, appointed by the Queen. In cases of imperial interests the governor acts under the orders of the imperial government; but for all practical purposes the direction of affairs is vested in the people.

Any man of twenty-one years of age and upwards who is a born or naturalized British subject, and who has held for six months a freehold of the value of £50 sterling, can, by registration, qualify himself to vote for a member of the house of representatives.

The house can be dissolved by the governor at any time, and then a new election must take place. In these elections party feeling runs very high, much higher than in the United States.

Among the acts of the last session of Parliament was an increase of the tariff; all articles which had heretofore been taxed at 10 per cent. ad valorem now have a duty of 15 per cent. ad valorem.

Spirits have a duty of 14s. per gallon; liquors and cordials, 14s. per gallon; perfume and cologne waters, 21s. per gallon; wine, 4s.; sparkling wine, 6s. per gallon. The duty on tobacco is 3s. 6d. per pound. Wire netting has a duty of 40s. per ton.

It is thought by many that the increased duties have caused a very general falling off of trade throughout the country.

THE CLIMATE.

The climate of New Zealand is described as the finest in the world; the changes of weather are, however, very sudden. Rain and sunshine often alternate so suddenly and frequently as to defy previous calculation. It is claimed that these changes are confined to narrow limits. There are no wet and dry seasons. The mean annual temperature of the North Island is 57°, and of the South Island 52°. Spring begins in September, autumn in April, and winter in June. January and February are the warmest months, and June and July are the coldest. A fortnight seldom passes without rain, and rain rarely continues for three days at a time. The atmosphere is moist, and fogs are frequent in the South Island.

In the province of Auckland the climate is subject to neither extremes of heat or cold. Peaches, apples, pears, plums, melons, and indeed all the fruits of temperate zones, except the grape, flourish in New Zealand. Lemons, oranges, and citron grow to perfection in the North Island.

Meteorological observations taken in 1878⁹ at Auckland, latitude 36° 50' south, longitude 174° 50' east, altitude above sea 258 feet, by Mr. E. B. Dickson, government observer, give the following results:

Months.	Mean height of barometer.	Temperature of air in shade.					Solar radiat.		Total rain-fall in month.	Number of days of rain.	Maximum fall in any 24 hours.
		Mean temperature for month.	Mean daily range.	Extreme maximum.	Extreme minimum.	Extreme range.	Mean.	Maximum.			
1878.	Inches.	°	°	°	°	°	°	°	Inches.		In.
January	29.943	64.5	16.1	80.1	47.2	32.9	137.0	151.4	3.890	16	1.125
February	30.094	63.8	14.6	76.6	51.2	25.4	132.1	146.1	1.765	13	590
March	30.176	64.3	15.9	79.2	46.3	32.9	128.6	141.6	1.550	10	220
April	30.037	62.2	15.4	78.0	42.6	35.4	121.3	136.6	1.315	15	370
May	30.097	54.9	13.3	73.1	35.6	37.5	102.1	116.7	3.340	21	980
June	29.764	54.1	12.3	64.8	38.6	26.2	101.6	111.5	6.245	28	920
July	29.885	50.6	11.0	62.4	35.6	26.8	96.1	111.5	4.730	23	1.130
August	29.749	50.1	11.1	61.1	38.6	22.5	102.7	116.8	4.485	28	545
September	30.192	55.7	11.1	66.6	34.2	32.4	111.6	129.5	2.890	16	995
October	30.032	56.6	12.2	67.1	44.2	22.9	113.3	128.7	5.020	20	1.190
November	30.004	61.5	13.8	73.2	46.3	26.9	126.6	141.9	1.155	14	300
December	29.966	67.3	15.8	81.0	52.3	28.7	124.2	142.3	1.015	8	575
Means, &c.....	29.995	58.8	13.8	81.0	34.2	46.8	116.5	151.4	37.160	212	1.190

THE PUBLIC DEBT.

The public debt of New Zealand on the 30th of June, 1879, amounted to £21,513,303, and the annual liability for interest is £1,083,943. This is certainly an enormous debt for so small a population. Large amounts have been borrowed for the construction of railroads and other public works.

The following is a statement made by the honorable member of public works in Parliament on the 7th of August, 1879:

I shall now shortly allude to the department of working railways. In the Middle Island during the past year 59 additional miles of railway have been opened for traffic, making a total, at 30th of June last, of 809 miles, the total cost of construction of which amounts to £5,757,188. The gross receipts have been £601,281 6s. 1d. The working charges and maintenance have been £428,498 19s. 1d., leaving a balance of £172,682 7s. available towards payment of interest on cost of construction, being at the rate of 3 per cent. for the year. The number of passengers carried during the year was 2,018,871. In the North Island during the past year 27 additional miles have been opened for traffic, making a total on the 30th June last of 336 miles—the total cost of construction of which amounts to £2,300,000. The gross receipts have been £156,762 1s. 4d., and the working charges and maintenance £116,879 15s. 11d.; leaving a balance of £39,935 6s. 2d. available towards payment of interest and cost of construction, being at the rate of nearly 14 per cent. for the year. The number of passengers carried during the year was 703,869. I feel assured that these results must be regarded as satisfactory, and cannot but afford matter for congratulation to us all. They augur well, in my opinion, as to what may be looked forward to as population increases, and they amply justify the additional loan which it has been resolved to raise in order to prosecute these new railway works which have been commenced during the past year—railways which I feel persuaded will, upon the whole, be not only more productive than, but will greatly increase the traffic upon, those lines which have already been constructed. I may say that it was the intention of the government to have applied for power to lay off small farm settlements along the various new lines, and to dispose of the same upon such terms as might be deemed best to secure the permanent location on the soil of those employed in the construction of the works. I venture to hope that no time may be lost, after the assembling of the new Parliament, in legislating in this direction.

The government has recently negotiated an additional loan of £5,000,000. Indeed so much confidence is felt in the resources of the country that the Bank of England offered to advance twice the sum asked, and the new securities were quoted as high as 103.

THE TRADE WITH THE UNITED STATES.

The principle article of export from New Zealand to the United States is kauri gum. It is used in manufacture of varnish. It is exuded from the extinct kauri forests. The New Zealanders dig for it with iron rods. It is often found in large blocks several feet in thickness, and some of it as clear as crystal. This article of industry is peculiar to the province of Auckland. The kauri tree is sometimes 200 feet in height and 3 or 4 feet in diameter. It is a magnificent timber tree, and makes excellent furniture. It is susceptible of as fine a polish as mahogany, and is fully as beautiful. It is very hard, and some varieties, such as the mottled kauri, are absolutely unsurpassed in beauty and utility. So great a quantity of timber is cut from this tree that the kauri forests are rapidly disappearing.

Stretching away in a northerly and southerly direction of over a thousand miles, this colony has vegetable life adapted to almost any climate of tropical and temperate zones. Its fuschia trees 50 and even 70 feet high, and 3 feet in diameter, covered with blue flowers, green inside and bearing an edible fruit; its bata, commencing life as a climbing vine, growing to the tops of other trees, sending branches that unite around the trunks and grow together, forming a net-work which compresses and kills the trees, the rotten wood falling out of the meshes, until gradually the whole grows solid and occupies the place of the tree it has destroyed. The bata often grows to 100 feet in height. The wood is red and hard, and receives a fine polish. The tree, while growing, is so inflammable that it can be set on fire with a match, and will burn until it is entirely consumed. This is, indeed, one of the wonders of New Zealand. This tree, and many other forms of New Zealand vegetable life, could easily be transported to the Pacific Slope of the United States.

The duty on wool prevents its shipment to America. The flax known as New Zealand flax is said to be the strongest material in existence. A small quantity of it goes to the United States.

The chief articles of American products are hardware, edge-tools, wooden ware, plows, and buggies and harness.

The New Zealanders take much interest in the United States. They subscribe readily for our papers, and are especially anxious to trade with us. The Pacific mail steamers touch at Auckland on their way to Sydney, Australia. They carry the English and American mails, and have recently reduced the prices of freight to and from the United States.

G. W. GRIFFIN,
Consul at Auckland.

SAN FRANCISCO, CAL., May 8, 1880.

THE WINE AND SPIRIT TRADE OF NEW ZEALAND.

REPORT BY CONSUL GRIFFIN, OF AUCKLAND.

I have the honor to submit for your consideration the following information in regard to the wine and spirit trade of New Zealand.

Spirit imports.—There was imported into the colony of New Zealand

during the quarter ending September 30, 1880, \$462,667 worth of spirits, against \$447,672 for the corresponding quarter of last year.

The customs returns for this quarter are not classified, and I am therefore unable to give the exact quantity and make of each kind of spirits. These are included under the general head of spirits, whiskies, brandies, rum, gin, and schnapps.

Scotch and Irish whiskies.—The whiskies most generally in use are Scotch and Irish, and of the former the favorite brands are Lorne, Greenlussa, Campbeltown, Kirkliston, Hazelbeen, Islay, and Royal Bend. The favorite brands of Irish whiskies are Thomas Dunville's, John Jameson & Son, Kinahan's L L, and William Jameson's.

The price of Scotch and Irish whiskies in bond varies from \$1.44 to \$2.52 per gallon. The duty is \$3.36 per gallon, thus making the wholesale price from \$4.80 to \$5.76 per gallon.

American whiskies.—I regret to be obliged to say that there are no American whiskies imported into New Zealand, with the exception of very small quantities for private use. These liquors have never been introduced here in sufficient quantities to be fairly judged. I have been informed by some of the leading liquor dealers of San Francisco, that at first they experienced the utmost difficulty in introducing American whiskies into British Columbia, but after they were once fairly introduced the people preferred them to those of any other kind, and now the demand and sale in that colony are constantly increasing.

Brandies.—The brandies in use here are from Charente and St. Nazaire. The price in bond of the above brandies is from \$2.40 to \$3.12 per gallon. The duty is \$3.36 per gallon.

Rums.—The brands of Jamaica rums in use are Lowndes and Lemon, Hart & Co. The price of rum in bond varies from \$1.02 to \$1.80 per gallon. The duty is \$3.36 per proof gallon.

Holland gin.—The price in bond is from \$1.20 to \$1.44 per gallon. The duty is \$3.36 per gallon.

Schnapps.—Udolphi Wolfe's aromatic Schiedam schnapps are very generally used here. The price is from \$5.40 to \$5.76 per case of one dozen quart bottles.

The wine trade.—The imports of wine to New Zealand for the quarter ending September 30, 1880, amounted to \$41,021, against \$37,176 for the corresponding quarter of last year.

The favorite wines are sherry and port. The price of sherry wines in bond varies from \$2.04 to \$5.40 per gallon, according to quality. The duty is \$1.20 per gallon.

The wholesale price of port wine in bond is from \$3.84 to \$4.56 per gallon, according to quality. The duty is \$1.20 per gallon.

Foreign claret.—The price of claret in bond is from \$1.92 to \$4.80 per gallon, according to quality. The duty is \$1.20 per gallon. The sale is, however, limited.

New Zealand wines.—There is very little wine made in New Zealand. Only the southern part of the North Island is adapted for the growth of the grape, and its culture has not become a settled industry. The grape even in the southern part of the North Island to reach perfection has to be grown under the glass.

Australian wines.—A strong effort has been made to introduce the Australian wines into this market, but it has met with indifferent success. There does not appear to be any great demand for them. They will not compare in quality or flavor with similar wines made in California. The Australian wines that have been brought here are of the vintages of J. T. Fallon, Green & Co., and Penfold & Co. The following are

their brands: Sherry, Muscat, Hermitage, Tokay, Grenage, Muscadine, Frontinac, Australian red and Australian white wine. There are over \$5,000,000 worth of these wines in bond in the Australian colonies.

California wines.—The California wines that have been brought to New Zealand have met with the approval of several prominent liquor dealers in Auckland, who ordered them for their own use, and they are of the opinion that it is only a question of time as to the general introduction of these wines into this market. They express a decided preference for the vintages of Lachman & Jacoba, and Gundlach & Co., and especially for their Muscat, Tokay, claret, champagne, and California red and white wines.

The vintage for California for this year has been ascertained to be over 10,000,000 gallons. This production is much larger than that of any previous year. It may be estimated that, out of a population of nearly 50,000,000, at least one-half of this wine could be used in the United States. It would cost about one-third the price of pure spirits, or one-fourth the price of whisky, of which such vast quantities are sold in the United States. It would then be as cheap, or nearly so, as lager beer.

Champagnes.—The wholesale price of champagne in bond is from \$10.56 to \$24 per case of one dozen bottles. The duty is \$4.80 per case of one dozen bottles. There are no champagnes manufactured in the Australian colonies, and I am of the opinion that it would require only a slight effort on the part of the San Francisco and New Zealand merchants to establish a successful business here for these wines. The duty upon California wines is the same as upon those from Italy, Spain, Portugal, and France, viz, \$1.20 per gallon, and but 24 cents more than the duty charged upon Australian wines.

Bottled ale and beer.—The bottled ale and beer imported into New Zealand for the quarter ending September 30, 1880, amounted to \$29,184 against \$30,154.40 for the corresponding quarter ending September 30, 1879.

The wholesale price is \$3.12 to \$3.24 per dozen quart bottles; the duty is 72 cents per gallon.

Buck ale.—As regards buck ale, the sale is nominal; the imports for the quarter ending September 30, 1880, being only \$4,008 against \$3,849.60 for the corresponding quarter ending September 30, 1879; duty, 36 cents per gallon.

American lager beer.—There have been several small shipments of American lager beer received in New Zealand from Chicago and Saint Louis, which met with encouraging success, but not being followed up by regular shipments, the liquor merchants objected to handling them.

New Zealand beer and ale.—About 500,000,000 gallons of ale and beer are brewed annually in New Zealand. It has been ascertained by a scientific analyst that in a barrel of this ale, containing 36 gallons, there are 320 pounds of water, 20 pounds of alcohol, and 20 pounds of extract or semi-solid sediment.

Liquor freights.—The freight upon wines from San Francisco to Auckland is \$21 per ton measurement, or 10½ cents per gallon, via the Pacific Mail Steamship Company.

The freight upon wines and spirits for sailing vessels from New York to Auckland is 30 cents per foot measurement. It is probable, however, that these rates would be materially reduced as the trade between the United States and the colonies increased.

G. W. GRIFFIN, *Consul.*

UNITED STATES CONSULATE,
Auckland, New Zealand, November, 1880.

CONTINENT OF EUROPE.

EMIGRATION FROM HUNGARY TO THE UNITED STATES.

REPORT BY CONSUL STERNE, OF BUDA-PESTH.

As heretofore this state, "Hungary," has furnished but a small quota towards the annual tide of emigration to the United States, it may be in place for me to state to your Department why this move has suddenly assumed almost the shape of a "Völker Wandering." Hungary being an agricultural country, the poorer part of its population has been gradually reduced to a very pitiable condition in consequence of the successive failures of the crops during the past few years. Especially during the past abnormally severe winter have these people had a specially trying time of it; at best, they are never well prepared for the cold season, their usual method of providing for it being, "like the harvesters in the United Kingdom," to migrate each spring to the wealthier districts and there by hard work and economy to lay by the stores for the coming winter; last year's almost total failure of crops resulted to them, of course, in total failure also, and thus have they been within a point of starvation ever since the last cold weather begun.

It seems that the Hungarian Government has tried conscientiously to alleviate the condition of the laboring poor by employing them on public works, which were started for the purpose of relief; but it seems that these works were stopped too soon to enable the poor folks to bridge over until better times should arrive; for instance, I hear that in the "Comitat of Zemplin" these works were closed on the 28th of April with the promise of reopening soon. Some of the people, unable to hold out longer, assembled on the 10th instant, near the government works, praying that work might be resumed. They had been quite happy to work for 13, 9, and 5 cents per day for *men*, *women*, and *children*, respectively, and at these wages had been regaining strength, but since the cessation of work they had subsisted on grasses, roots, &c., without salt, raw or cooked; as a consequence the laborers in some districts have become so weakened as to be unable to raise stones weighing 10 pounds at their work. It is from these districts that the people emigrate in such masses that some villages are becoming nearly deserted.

The question, will this move prove beneficial to "our country," or even to the emigrants themselves, induces me to inform your Department that from what I can learn these people, in most cases, leave their homes in very destitute circumstances, in fact barely prepared to land in New York, and in consequence many of them will become subjects of charity upon their arrival. Statistics from these districts indicate further that epidemic diseases may follow such a long strain of starvation, the germs of which may not become developed until these people are in America.

These people will further be placed at a disadvantage in the United States, because being mostly of the Slavonian race, "Slowacks," they speak a language which may as well be considered "dead."

People in Eastern Europe are yet in great ignorance about America, but their faith is strong that "it" is the heaven of all the needy and poor; that simply to land there, fortune is assured to them. Of course the greatest portion of the people who reach New York in their condition will be sadly disappointed, and I consider it my duty to advise

your Department of this state of affairs, because this move is not altogether spontaneous; there seems to be an agency at work, which by misrepresentation induces people to leave their homes who will not better their condition thereby, nor benefit the country which receives them.

People inquire by letter and in person at this consulate about this agency of which they have heard or read; some even claim to be informed that this consul has instructions from his government to assist people in emigrating.

I am under the impression that the United States Government does not approve of emigration brought about by such irregular means and of the character described, and therefore beg leave to suggest whether steps should or could not be taken to correct the evil, if I may be permitted to term it such.

I have information that agents are managing the business a good deal in the manner of the "coolie trade," and that these emigrants are shipped to the United States about like so many "slaves."

HENRY STERNE,
Consul.

UNITED STATES CONSULATE,
Buda-Pesth, May 19, 1880.

AMERICAN TRADE WITH HUNGARY.

REPORT BY CONSUL STERNE, OF BUDA-PESTH, ON HUNGARIAN TRADE AND AGRICULTURE, AND HOW TO ENLARGE AMERICAN TRADE IN HUNGARY.

THE CROPS OF 1880.

The crops of Hungary have this year resulted as follows:

Wheat and rye have produced but about 70 per cent. of an average crop; neither can their quality and condition be considered as satisfactory, in consequence of damage by the long continued rains during harvest and thrashing season.

Barley produced about 90 per cent., but it also has been damaged by wet weather, especially so for the principal purpose for which it is used—the brewing business; therefore barley does not realize a full value to the producer and varies largely in its value.

Oats produced about 75 per cent.

Rape and flax seed have not done well; the prospect for corn is good, and prunes promise an exceptionally good crop, in consequence of which they are much lower than last year, which hint may be of value to the American importer of the article.

Grapes have done quite well, but the late cold rains are having quite a ruinous effect upon them, and the prospect of a good and cheap wine in 1880 is doubtful now.

PRICES OF HUNGARIAN PRODUCTS.

The prices of these and other articles of Hungarian produce at present writing are as follows, viz:

Wheat is worth \$1.02 per bushel of 60 pounds; oats, 36 cents per

bushel of 32 pounds; corn (old) is selling at 80 cents per bushel of 56 pounds, and new corn is being sold for spring delivery at 60 cents.

The following prices are each given per 100 American pounds:

Rye, \$1.73; barley, \$1.12 to \$1.68; linseed, \$2.52; rape-seed, \$2.24; oil cake, \$1.03; bran, 72 cents; beans, 77 cents to \$1.05; lard, \$13; bacon, \$13.10 (for smoked); tallow, \$9.32; prunes, \$3.36; sole leather, \$31.70 to \$33.92, in proportion to the weight of the hides; raw spirits are worth \$10.07 per 100 liters, and distilled spirits, \$13.94. Flour is manufactured here in nearly a dozen grades, the best of which, No. "O," is worth \$3.88 per 100 pounds; it is generally sold in sacks of 100 kilograms, the sack thrown in, but its weight is charged as flour.

(The original quotations upon all of these goods were in Austrian florins, which in commuting I have valued at 41 cents each, and the above named pounds are upon the basis that 100 kilograms equals 210 American pounds.)

HUNGARIAN TRADE AND AGRICULTURE.

In prosperous years Hungary exports largely of all these articles; also feathers, honey, wax, and wool. Hides (raw) are shipped out of the country in large numbers, though nearly all the leather is imported; the manufacturing interests here not being well developed in any branch, compels Hungary to be a large importer, not only of this, but of nearly all lines of manufactured goods.

Hungary has long been considered the granary of Europe, and it is indeed a blessed land in its ability to produce and the variety of its products. In consequence, it has long supplied the continent and Great Britain with the articles of which these countries were short.

Especially in wheat and flour has Hungary been dictator and monopolist of the markets, and this has been an undisputed fact for so long a period that, in their feeling of security, the people have, so to say, gone to sleep over it, and, to continue the comparison, they now find themselves suddenly startled out of their happy dream by the storm-flood of produce which America is of late pouring into Europe, and this, too, by a land which, comparatively speaking, has been "terra incognita" to them; of course they are learning to know us now, and with a vengeance at that, for the United States have become their great "bugbear."

In their alarm at thus seeing themselves daily losing ground in the markets of Europe, they are slow in finding a remedy for the evil, especially as long as the producers and dealers will adhere to practices which are no match to the manner in which the enterprising and practical American does his business.

Their mode of handling grain is too expensive to allow them to furnish cheap grain. Elevators do not exist in the country; therefore the accumulating grain in this city, the principal market center of the country, is placed for storage in vaulted cellars, which again causes frequent removals, owing to the waters of the Danube at a high stage occasionally penetrating to these places; and all of this work, as well as the loading and unloading into and from barges and railroad cars, is being done by actual "man-power."

Buda-Pesth at last sees the necessity of having warehouses, and the city is building one now which will be of immense size and fire-proof.

Out in the country the ancient cisterns or vaults are still in use to some extent for storing grain, and as an historical item I may mention that even now some of the cisterns with grain hundreds of years old are discovered in plowing; which is no doubt brought about by the fact

that during the many wars, when occasionally whole communities were exterminated, these sod-overgrown cisterns were forgotten or lost sight of.

AMERICAN PRODUCTS IN HUNGARY.

It is quite amusing to see the alarm of the people when of late the rumor becomes current, now and then, that shipments of American flour have reached this state, which would be "carrying coals to New Castle" indeed! But I can hardly hold out the promise to our American dealers that they will ever be able to successfully introduce wheat or flour to this state, for the productive power of the country is so large in proportion to its population, that only in times of entire failure of crops such a necessity could arise; and I have only introduced the subject to show how the good and cheap American flour in Europe is affecting this, the pet industry of Hungary; only last week the 15 large mills of the city have determined to reduce their production by two-sevenths during three months as a means to remedy the unprofitable state of their business.

But there are several articles of produce which, in my opinion, America should be able to introduce successfully in spite of the existing high tariff, and upon this subject I will now speak.

Of grain I can only mention corn, upon which there seems to be a large margin against the price of it here. But especially lard, meats, vegetable oils, oil cake, and above all our cheap and good canned meats, should do well here (beef being sold very high here, and that slaughtered being none of the best); also sole-leather I would suggest, and articles made from it, such as belting, and, while I speak of it, the "cotton belting."

As to the chances of extending the export of general American merchandise and manufactured goods to Hungary, I will say that, this being an agricultural state almost exclusively, it should offer a field to our manufacturers of agricultural implements equal to, if not better than, any in Europe; yet it seems to have been neglected up to this time, for, while I hear of the vast quantities of these goods being shipped to Europe, I cannot see that they have reached this locality to the extent which the manner of cultivating land here warrants.

Unlike in Germany or France the land here is mostly owned in large tracts, and, being principally level and prairie-like, it is specially well adapted to the use of machinery. I am informed that nearly all classes of American machines are already in use here excepting thrashing machines. Why these, in which we surely excel, have been neglected is a mystery to me, for when I see the unwieldy and unsightly English or home-made machines passing my door I cannot help thinking of their chances if once our practical, light, and neat-looking American machines were introduced.

Since I came here I have received quantities of circulars on the subject (and which I have distributed), but if our manufacturers think that these beautiful, but deaf and dumb, pictures will act as practical salesmen, they simply don't know the people they are sending them to.

Another fact which is surely an impediment also to the successful placing of American goods in this market consists in this: that few, if any, of our goods seem to reach here direct, and they thus become unnecessarily dear to the consumer. All water freight to Fiume, the Hungarian seaport, cannot be much higher than freight from New York to Liverpool, London, Bremen, Hamburg, &c., from which, thus far, all American supplies have been drawn. This immediate profit or loss to the con-

summer should be avoided, so that by most positive cheapness our goods could become more popular, aside from their many other recommending qualities.

I am informed that a project is under way to build an all-water route to the very heart of the agricultural country, and this should give us additional facilities to practically place our goods alongside of those of any other nation.

Our light and strong plow should also do well here, and I do not see enough of the many small wares and tools for which America has become so justly celebrated. Articles made of wood, such as hubs and spokes (of course in shape to suit this market), hay-forks, handles of all sorts, shoe-pegs, clocks, and our many handy patent nicknacks, should all find ready sale here.

But to succeed, either active agents (speaking German or Hungarian) should be sent here, or local agencies be established, which will make it their special duty to do what they are intended for.

HENRY STERNE, *Consul.*

UNITED STATES CONSULATE,
Buda-Pesth, September 20, 1880.

NAVIGATION OF THE LOWER DANUBE.

REPORT BY CONSUL-GENERAL WEAVER, OF VIENNA.

As considerable agitation and correspondence in regard to the regulation of the navigation of the Lower Danube from the Iron Gates to Galatz have arisen recently, on account of the efforts made by Austria-Hungary to procure a preponderating influence in the sub-committee of control, I thought it might be of interest to lay before you a short *exposé* of the question as it now stands.

Very briefly stated, the facts appear to be as follows: The International European Danube Commission, in conformity with the treaty of Berlin, revised, last spring, the regulations for the Danube from Galatz to Sulina, but submitted that part above Galatz as far as the Iron Gates to a sub-committee presided over by the Austrian commissioners. This sub-committee has now completed its work, and although the report is not officially published, it is affirmed that the committee propose to appoint a permanent mixed commission, composed of representatives of the four riparian states—Austria-Hungary, Servia, Roumania, and Bulgaria. This commission would sit at Rustchuk and superintend the rules sanctioned by the European commission. But as proposed, Austria is to have not only the presidency of the commission, but in case of a tie between the four representatives she would also have an additional casting vote.

This arrangement is regarded by Roumania and Servia as an attempt on the part of Austria to secure a monopoly of the navigation of the Danube from Galatz to the Iron Gates, to prevent which it has been proposed that the rules for the navigation of this part of the river should be drawn up by the European commission, including representatives from Roumania, Bulgaria, and Servia, and that the execution of these regulations should be left to each riparian state along its territory. At the present writing it is impossible to predict a satisfactory settlement of the question. That Austria has presented her view of the matter to the powers in order to procure their support is openly stated,

and one of the leading journals of the city affirms that Germany and Italy have already expressed themselves favorable to the Austrian *avant projet*, but that England, Russia, and France can be induced to grant their adhesion is exceedingly doubtful.

JAMES RILEY WEAVER,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Vienna, September 29, 1880.

COMMERCE OF ANTWERP, BELGIUM.

REPORT BY CONSUL STEUART.

The winter has been an exceptionally severe one here, and upon two occasions, once in December and once in January, for over two weeks each time, navigation was entirely suspended on account of the quantity of ice in the river. This put a stop to business on the docks and entailed much suffering upon the laboring classes, whose daily occupation and means of livelihood were thus taken away. At present the trouble is over, the ice has disappeared, and will not probably return this season. The harbor is so crowded with vessels that every foot of dock room and every resource of the harbor are called into play to accommodate them and handle their cargoes.

Antwerp is alive to the necessity of providing for the demands to meet her rapidly increasing business, and very important improvements are in contemplation and some in course of construction. They seem to progress slowly, but in a few years they will all be completed.

It is proposed to enlarge the quays and extend the railways along the same, to extend the basins and provide more room for ships, to establish steam and hydraulic cranes, to apply hydraulic power to work the bridges and locks, to use electricity for lighting the docks and the harbors, to build additional dry-docks, to build a dock and special depositories for petroleum, &c.

The large amount of wheat imported here and the primitive way of handling it make elevators a necessity, and as two companies are now struggling for concessions from the city we will probably see them erected in the course of time.

From such statistics as I have been able to gather of the trade of the city for 1879, I wish to offer the following short review regarding those articles in which the United States are mostly interested.

Wheat is the most important, for in this article we play the principal rôle. For some years past the arrivals of wheat from the Baltic and from the North of Europe have gradually diminished, while in the same time the importations from the United States have largely increased.

During the past year the harvests in all the grain-producing countries of Europe were poor and below those of the preceding year. Fortunately, however, the crops in the United States were very abundant, and the amount sent abroad so large that in the face of the very heavy demand the price was kept at a moderate figure.

The total amount of wheat imported into Antwerp during the year 1879 was 703,527 tons, against 465,185 tons in 1878, being an increase of nearly 50 per cent., of which amount the United States furnished 437,755

tons, being over 60 per cent. of the whole, and nearly as much as the entire quantity imported in 1878. California alone sent 54,727 tons.

Eight American ships arrived during the year loaded with wheat from the United States, namely, 7 from San Francisco and 1 from Philadelphia. They brought in all about 17,140 tons. All the remainder was brought in foreign bottoms.

Rye.—In this article the demand during the first three quarters of the year was very regular, but during the last quarter the supply rather fell off and prices advanced considerably.

The importations for 1879 were 253,053 tons, against 176,218 in 1878, and of this quantity 54,715 tons came from the United States and found ready sale at good prices.

I append a table of prices for wheat and rye during 1878 and 1879, given in francs per 100 kilograms.

There is noticeable a gradual decline in 1878 and an advance in 1879, so that at the close of the latter year prices were just about where they started in 1878.

Months.	Wheat.		Rye.	
	1878.	1879.	1878.	1879.
	<i>Francs per 100 kilos.</i>	<i>Francs per 100 kilos.</i>	<i>Francs per 100 kilos.</i>	<i>Francs per 100 kilos.</i>
January to May.....	33 to 38	24 to 26	21 to 19	16 to 17½
May to September.....	28 to 26	26 to 29	19 to 17	17½ to 19
September to December.....	26 to 25	29 to 33½	17 to 16½	19 to 24

Dry salted pork.—Speculation in this article was very active during the year, and prices varied according to the demand and supply. The stocks on hand are never very heavy, as nearly all sales are made for future delivery, prices being regulated by cable advices of the American market and supplies ordered in the same way. Large orders are constantly on the market for purchase for shipment to France, Germany, and Holland.

Owing to advices received from the United States in October that prices were relatively higher there than here, trade became very active, and everything available on the market was bought up at advanced prices, but, as large quantities were soon received from America, the market became more settled, and, at the close of the year, prices stood about as follows (in francs per 100 kilograms): 89 to 90 francs for long middles; 98 to 100 francs for short middles; and about 94 francs for the two kinds together.

A good business was also done in shoulders and hams in dry salt, the importations being readily sold on arrival, so that there was a very limited stock on the market at any time; prices closed at about 66 francs per 100 kilograms for shoulders, and 115 francs for hams.

Smoked hams were also in demand, and the importations were immediately bought up at prices ranging from 110 to 135 francs per 100 kilograms for large hams. At the close of the year the price was 130 francs and no stock on hand. Small hams of desirable brands brought from 5 to 10 francs more.

The total importation of dry salt meat for 1879 was as follows:

From—	Cases.	Barrels.
New York	122,546	9,749
Philadelphia	32,745	3,733
Boston	953	75
France	2,305	.....
Hamburg	35	250
England	7,199	312
Holland	81	.....
Total in 1879	165,864	14,128
Total in 1878	128,684	9,344
Total in 1877	86,578	4,801
Total in 1876	47,383	6,120

Showing that almost double the quantity was imported in 1879 over 1877, and nearly four times as much as in 1876.

The fluctuations of the market for the four years mentioned above were as follows (given in francs per 100 kilograms):

Years.	Long middles.	Short middles.
	<i>Francs per 100 kilos.</i>	<i>Francs per 100 kilos.</i>
1876	106 to 140	106 to 143
1877	88 to 108	92 to 110
1878	57 to 93	58 to 98
1879	54 to 98	56 to 100

Petroleum.—The importations were very irregular during the year, and the state of the market unsatisfactory to all dealers; the consumers were the only ones contented, as the price was low.

The market opened in January, 1879, at about 22 francs per 100 kilograms for refined petroleum, and, after fluctuation, reached as low as 16½ francs in the summer. In September a gradual advance commenced and continued until, at the end of the year, the price stood at about 20 francs.

Table of importations for 1878 and 1879.

From—	1878.	1879.
	<i>Packages.</i>	<i>Packages.</i>
New York	284,747	362,079
Philadelphia	414,346	284,930
Baltimore	157,669	65,279
Richmond .....	.....	3,115
Israel and Sulina	6,516	.....
England	342	104
Total	843,020	695,507

Composed as follows:

Description.	1878.	1879.
Refined	806,823	655,820
Do	1,000	.....
Crude	11,868	2,820
Naphtha	16,953	26,688
Do	2,860	3,187
Residuum	1,500	5,960
Lubricating	2,617	1,042
Total	843,620	695,507

Showing a decrease of 148,113 packages for the year just closed; this was owing, in a great measure, to the ice blockade during December, when a number of vessels laden with petroleum were lying at the mouth of the river waiting the opening of navigation to come up to the city.

No refined petroleum was imported in 1879 in cases, and the quantity of crude shows a great falling off. The stock of refined on hand December 31 last was 84,696 barrels.

Spirits of turpentine.—The importation from France was larger during 1879 than the preceding year, but from the United States there was a falling off. The stocks on hand from the beginning of the year were so large that prices remained very low until October, when, in sympathy with the general improvement in business, a demand arose, the price advanced, and the last three months of the year were profitable for the producers and importers, and confidence was inspired for the future.

The importations were as follows in 1879: From France, 8,559 casks, against 5,122 casks in 1878; from America, 19,105 casks, against 21,553 in 1878; and prices ranged, from January to September, at from 25 to 26½ francs per 50 kilograms for American, and 26 to 29 francs for French; then came a general advance, closing in December at 42 francs per 50 kilograms for American, and 40 francs for French.

Lard.—The importation of lard from the United States in 1879 was largely in advance of 1878. The demand was very good, but, as the market was regularly supplied by the direct lines of steamers, the price was kept very moderate. During the last three months of the year the transactions were very heavy, covering not only the stock in hand and deliverable at short notice, but also contracts for future delivery.

A number of speculators were operating largely on the market at relatively high prices, which will necessitate a large importation in the early part of this year.

The importation for 1879 was as follows:

From—	Tierces.	Boxes.
New York.....	111, 704	21, 852
Philadelphia.....	1, 222	677
Boston.....	50	.....
France.....	1, 710	.....
Hamburg.....	40	.....
England.....	190	.....
Total for 1879.....	114, 916	22, 529
Total for 1878.....	89, 712	21, 671

The prices paid for the Wilcox brand during 1878 were from 82 to 110 francs per 100 kilograms, and during 1879 from 78½ to 109 francs.

Rosin.—The large production and low price of the American rosin have almost driven the French article from the market. The falling off in the importation for 1879 was owing, in a measure, to the difficulty in getting transportation from the United States in the face of the large quantities of grain and petroleum waiting shipment.

The total importation was 77,579 barrels in 1879, against 82,077 in 1878, of which quantity the United States furnished 54,072 barrels in 1879, and 53,156 barrels in 1878. The stock of American rosin on hand at the close of the year was about 8,000 barrels.

Wood.—Cedar wood of good quality for the manufacture of cigar-boxes always finds a ready market. The receipts for 1879 were 246 blocks from Buenos Ayres, 10 from Rosario, 507 from France, 326 from England,

and 30 from Hamburg, making a total of 1,119 blocks, with a value of from 11 to 15 francs per 50 kilograms.

In cedar wood for pencils, 3,140 blocks were imported, of which number 2,824 blocks came from the United States, and 316 from England, and they were forwarded to France and Germany.

The importation of black walnut was 205 blocks and 110 boards from Philadelphia, 78 blocks from New York, and 32 blocks from France, and the price was from 8½ to 10½ francs, according to quality.

NAVIGATION.

The total number of arrivals by sea at the port during 1879 were 4,248 vessels with a tonnage of 2,908,011 tons, being, as compared with 1878, a decrease of 335 vessels, but an increase in tonnage of 128,055 tons; 845 arrivals, or one-fifth of the whole number, were cargoes of grain.

Forty vessels with a tonnage of 48,431 tons carried the American flag.

There were 489 arrivals from the United States and 403 clearances for the same place. The outward cargoes to the United States by sailing-vessels consisted principally of empty petroleum barrels, old iron, glass, and ballast.

At present there are ten American ships in port; two cleared a few days ago with general cargoes for China, and three are now loading for the same place.

The total departures by sea in 1879 were 4,264, having a tonnage of 2,917,840 tons; of these, 2,351 took general cargoes; 147 took cargoes of old iron and rails, and 1,332 were in ballast.

Antwerp, from her position and connections, presents the best distributing point on the continent, and deserves the attention of all American manufacturers who desire to introduce their goods abroad, but discretion, good judgment and advice are necessary as to the kind, quality, and style offered, and I shall speak of this subject in another report.

The business of this consulate has increased very much for the first two months of this year over the same time in 1879; as, for example, against 38 invoices in 1879, 128 have been legalized in 1880. For 5 arrivals of American ships in 1879 we have now 11 arrivals, and 60 landing certificates have been legalized against 45 in the same time in 1879.

Business is reviving, and all are hopeful for the future.

JOHN H. STEUART, *Consul.*

UNITED STATES CONSULATE,
Antwerp, March 1, 1880.

THE HARBOR OF ANTWERP

REPORT BY CONSUL STEUART.

Antwerp, ranking next to London and Liverpool, has become, in point of tonnage, the first port in continental Europe, is the distributing point for northern and central Europe, and its maritime trade is increasing so rapidly as to tax to the utmost all the resources of the port for its accommodation.

The rapid growth of the city may be seen from the fact that in the last ten years the increase in the tonnage arriving here has been 242 per cent. against 110 per cent. in Hamburg and 37 per cent. in Liver-

pool; and the population has increased 40,000 in the same time. This is the natural result of a continental development of all sources of prosperity.

To meet the demands of this prosperous situation has been beyond all efforts that the city itself could make, and the state was compelled to come to the rescue.

In 1874 a convention was concluded for such changes and improvements as were needed, and which, when finished, will be sufficient, for a while at least, to supply the great need now felt. A glance at the present facilities of the port and the improvements now in course of construction may be interesting.

The river Scheldt affords a fine anchorage for vessels of the largest size, and the tide has a mean rise of $13\frac{1}{2}$ feet.

The port of Antwerp at the present time consists of quays along the Scheldt from canals opening into the river, seven docks, a basin, and three graving docks.

The stone quays along the Scheldt have a total length of 7,120 feet; the docks have an area of 100 acres; four of them have quay walls; the other three have sloping sides, and wooden jetties have been erected in two of these. The total length of the dock walls and jetties is 13,100 feet. Only the "Little Dock" and the "Kattendyk Docks" have direct communication with the Scheldt through entrances. The outer entrances to the Kattendyk and to the Little Docks have each two pairs of gates pointing inwards and one pair pointing outwards. The other entrances have each merely two pairs of gates pointing in reverse directions. Two entrances (old docks) are 59 feet, and two (new docks) 31 feet 4 inches wide at coping level. The average draft of water is 20 feet in the old docks and 21 feet in the new.

The amount of deposit annually dredged from the docks is 31,400 cubic yards, and in the channel outside about 32,700 cubic yards on the average. The navigable channels of the Scheldt between Antwerp and the sea are well marked by light-houses, beacons, and buoys.

The available surface of the quays of the seven docks for the reception and handling of merchandise is about 269,000 square meters. The different quays are designed for special uses, as, for instance, the western quay of the large old dock receives coffee, rice, and other merchandise arriving in sacks; the south and east quays are used for the importations of general cargoes; the wood basin entirely for vessels laden with wood; the basin of the Campine is used on one side for petroleum and on the other for grain; the basin of the Kattendyk is used for the landing of guano, for marble, and for all heavy merchandise intended for exportation; the Rhine quay, upon the river Scheldt, is used by the trans-atlantic steamers, and such other steamers as are too large to enter the docks; the rest of the quays upon the river, as also the four canals, are used for the interior traffic and for certain regular lines of passenger boats.

As the docks can allow only ships drawing less than 20 feet to enter and go out, many large ships are compelled to remain in the river at anchor until they can discharge sufficient cargo to enable them to go into the docks, and again, when loaded to about 20 feet, they have to return to and remain in the stream until they are full, thereby entailing delay, trouble, and expense.

The quays of the Scheldt are not large enough, and are often so crowded with merchandise that the passing of vehicles is very difficult, if not impossible. Again, vessels of any considerable size or draft of water cannot be moored at low water alongside of these quays, except the Rhine quay.

The quays of the river Scheldt are very narrow and irregular, entirely insufficient for the accommodation of the merchandise to be taken care of, and affording no space for the erection of the necessary appliances for handling and transferring cargoes. To correct these defects and to meet the demands upon the port is now the work in progress, which is being pushed rapidly on.

The extension of the Kattendyk Dock, commenced in 1877, will increase the surface 4 hectares and the length of the accessible quays about 750 meters; this will be finished in about five months from this present time. A large dock was recently finished and opened for the reception of all the river craft, thereby giving the large space heretofore occupied by them to larger vessels. Three large and commodious dry-docks are in course of construction, and will be finished at the same time as the extension of the Kattendyk Dock, say in March, 1881. A large dock to be devoted entirely to petroleum will be constructed, and this is much needed; but the largest and most important of all the improvements will be the rectification and construction of the quays upon the river front. They will present, when finished, a length of 3,500 meters, with a width of 100 meters and an available area of from 30 to 35 hectares, seven times as much as exists to-day along the river. The bed of the river will be deepened so that the largest steamers will be able to moor to the quay at low water, and there will be accommodation for more than fifty steamers of the largest size along the quay.

Another new dock of about 770 yards long, divided into three parts, is constructed, and will be used in a few weeks for the river traffic that now uses the canals. The width of the quay will be obtained by filling up these four canals and by removing all houses standing in the way, comprising some of the best business houses in the city. The new quays will be furnished with every modern appliance for the handling of cargoes; hydraulic power will be used to move the locks and bridges; steam and hydraulic cranes will be erected; a pair of shear-legs of 120 tons is already installed on the quay of the basin of the Kattendyk; one of the entrances is lighted by electricity and the other will be lighted in the same way. The docks will be lighted by large gas-lights; sheds will be built along the quays of the river for the protection of merchandise. An area of 56,000 square meters is now covered with sheds along the docks.

Railroads will be built along the front, connecting the quays of the Scheldt with all railway stations, so that goods in transit can be quickly and conveniently dispatched.

The old fortifications have been destroyed and the ground appropriated for the extension of the docks and the improvement of the city.

At the expiration of three or four years these works, which are in full progress, will probably be completed.

The representative from this city to the Belgian Chambers, speaking upon this subject in 1879, says:

The extension of accommodation for shipping does not at all keep pace with the increase of trade. In 1855 there were 162 tons for each yard of quay; in 1864 220 tons, and in 1876 the proportion had risen to 280 tons of shipping for each yard of quay. Notwithstanding the large extensions which are now in course of construction, if the present rate of increase in the trade of the port continues, the limit of proportion of shipping to quay space, namely, 340 tons for every linear yard of quay, will be reached in 1885.

The docks at Antwerp are too crowded, and it will be necessary not merely to finish the new works within the specified time, but also to prepare for very considerable additional extensions.

JOHN H. STEUART, *Consul*.

UNITED STATES CONSULATE,

Antwerp, October 20, 1880.

THE INDUSTRIES OF BELGIUM.

REPORT BY MR. THIRION, LATELY CONSULAR CLERK AT ANTWERP, AND NOW CONSULAR CLERK AT LIVERPOOL.

In compliance with the instructions of the Department of State, I have the honor to transmit herewith my first annual report as consular clerk. The subject is "the industries of Belgium." I intended to report also on the education and on the penitentiary system of Belgium, and I had already gathered information on the matter, but, in consequence of my transfer to Liverpool, I have not been able to pursue the subject.

BELGIUM IMPORTS AND EXPORTS.

Since the years 1860 and 1861, when France and England concluded their commercial treaty, which served as a basis for those of other European powers, business transactions have increased considerably in Europe. In consequence of the economical reforms inaugurated in 1861, which tended to the suppression of the old prohibitive tariff laws, the manufacturers in all the contracting countries were compelled to improve their machinery in order to be able to rival foreign competitors. The production increased everywhere in a condition more favorable than formerly; the consumption increased likewise, in consequence of the new channels open to the European commerce. Belgium followed the start, and its industry received a greater impulse.

During the Franco-German war, the commercial movement in Europe was partially suspended, but, demands from foreign places being as important as ever, all the work was monopolized by England and by Belgium, where the number of manufactures increased in order to make up for the production interrupted in a part of the continent.

Belgian imports and exports, which amounted, in 1859, to \$350,000,000, reached \$900,000,000 in 1871. Since then this amount has not varied much, but the amount of exports made direct from Belgium to other European countries decreased steadily. In 1856, shipments of Belgian products to countries beyond the seas represented 11 per cent. of all shipments. The production now is only 4 per cent. Exports are actually made to France, Germany, Holland, and England, whence the goods are, for the greatest part, shipped to other countries.

The establishment of direct relations with foreign countries, the founding of commercial companies under the direction of men perfectly acquainted with the wants of foreign markets, would be of the greatest use to Belgian industry.

BREWING.

Brewing is one of the most important branches of Belgian industry, and the average annual quantity of beer manufactured in the country amounts to about 105,668,000 gallons. Notwithstanding such a relatively large production, Belgium exports a very small quantity of beer. The introduction into France of the light and cheap beer produced in Belgium is prevented by the French customs tariff laws, which do not establish any distinction for any particular quality of beer imported, but prescribe a fixed rate of duty of four cents per gallon. Besides this, the Belgian excise duties hinder the manufacture of strong and well-fermented beer. The revenue tax being levied according to the size of the mashing-tubs

employed, the brewers are interested in getting the most they can from the mash, and they neglect the quality in order to obtain the quantity; yet, considering the advantages placed to its disposal, Belgium would be able to compete with any other nation, if there was a thorough fiscal reform.

From England, where the tax is levied on the hops and on the malt, at the time of the gathering, beer is exported to the amount of ten millions of dollars. In Germany, the tax being levied upon the malt used, it is profitable there to produce beer of superior quality, and the exports are very important.

The question of beer tariffs was the object of special discussion at the International Congress of Brewers held in Paris in October, 1878. After a careful and comparative examination of all the laws and regulations in existence in regard to the beer trade in Europe and in America, the American system of placing upon the barrels ticket-stamps of a value proportional to the capacity of the barrels was declared to be the most appropriate for facilitating a regular and normal production.

Brewing is an industry which contributes a good deal to the advancement of the national fortune and to the physical development of the working community. It is, and so is also distilling, very favorable to the farmer, because it is the means of ameliorating the land and of establishing an economical production of meat, the residue left after manufacturing the beer being used for fattening cattle.

Years ago one used to drink beer in northern countries only; now people drink it everywhere; but it is not produced everywhere in an equally good condition. Beer-making is so difficult an art that in Germany and in Austria there are schools for brewing. In London, public lectures concerning that industry are delivered at the University College.

There are in Belgium about 2,700 breweries, which produce annually 244,821,687 gallons of beer.

In London, which exports and consumes an enormous quantity of beer, there are only 25 breweries, not many more than in a small city of Belgium. In England, the division of the work is a great improvement; there, the breweries are distinct from the malt factories, and, in consequence, English brewers are able to produce large quantities of beer in a small place and with a small capital. In Germany and in the United States, the large breweries worked by joint stock companies are flourishing. In France, the situation is the same as in Belgium, and the development of the brewing trade is limited on account of the small capital invested; however, as the phylloxera advances slowly, but surely, constantly devastating fresh territories, it is possible that French capitalists will undertake beer-making, and that tracts of vineyards will be given to the hop culture, which is very favorable in France.

DISTILLING.

The distilling of grains is hindered by the revenue laws, and yet it is a very productive and useful industry.

Distillation extracts only the quintessence of the natural products employed, and leaves as residue all azoted or mineral matters, which are afterwards utilized or transformed for agricultural purposes and food for the cattle.

There are about 132,000,000 gallons of spirits produced annually in Belgium, of which 1,585,000 only are exported to foreign ports, Cuba and Porto Rico receiving more than half of the total exports.

In Russia the manufacture of alcohol from grain occupies the first rank among rural industries. The production increases rapidly, and exports extend to Turkey, Germany, the south of France, and Italy. There are in Russia 3,300 distilleries, manufacturing about 83,000,000 gallons of pure alcohol. The revenue for the government amounts to more than \$36,000,000. Exports of pure alcohol from that country, which were in 1866 343,200 gallons, now reach 6,600,000 gallons.

In France the consumption of alcohol amounts to 34,320,000 gallons; the quantity exported is 7,920,000.

BET SUGAR.

The production of beet sugar, which is an important branch of the national industry in Belgium, has been for some years in a great state of depression, increased by the constant expectation of changes to be made in the laws concerning the sugar trade and by the fear of a larger supply, which would necessarily bring ruin to a great number of the sugar-mills.

Another of the principal causes of the bad state of this trade is found in the competition of German and, specially, Austrian sugar, on the exportation of which the Austrian Government allows such bounties that the imperial treasury does not derive any income from that source, and that the manufacturer, greatly benefiting from it, is able to bring his raw sugar at a very low price on the French, Belgian, Dutch, and, specially, English market.

Competition with French sugar is also impossible. French refiners receive from their government such bounties that they are able to sell their sugar at a much lower price than the Belgian refiners, who are, in consequence, compelled to send their produce to England or to Holland, where they meet again the competition of Austrian sugar. As to the access to the French market, it is rendered difficult, if not impossible, on account of the duties levied on sugars at their entry in France, and on account of their not being entitled to temporary admission like French sugars.

SILK MANUFACTURE.

Silk manufactured in Antwerp has found a market in the United States and in England, on account of its special qualities.

Antwerp manufacturers have conserved their old system of working, and by using a special dye they manufacture an excellent black silk, known under the name of "Faille d'Anvers," of a greater purity than the Lyons silk.

Black supple silk was manufactured at Antwerp long before it was introduced into Lyons, and some old dyers recollect very well to have dyed for some of the principal Lyons manufacturers that black supple silk which was the prototype of English and Lyons silk now produced in so large a quantity.

DIAMOND CUTTING.

Diamond cutting has been known in India since a very remote period, but it never attained a great perfection there. In 1476, L. de Berchen, of Bruges, discovered the art of polishing this precious stone; an art unknown till then in Belgium. He established himself at Antwerp, and through his extensive relations with other jewelers he was enabled to improve his discovery, which made that trade very prosperous, and the fame of

diamond cutters of Antwerp became great. They formed an important association, the members of which enjoyed a notable consideration. The first diamond cut at Antwerp was bought by Charles the Bold, Duke of Burgundy.

Kings and princes, who alone in that time could afford the luxury of wearing diamonds, protected the new industry; but the troubles which arose in Antwerp during the sixteenth century drove from the city the best workmen, who established themselves in Amsterdam, and there continued their trade, which developed itself considerably. The reputation of the Antwerp diamond cutters was, however, maintained, and in the seventeenth century this industry was still prosperous. A popular saying of that epoch was, that laces, diamonds, and silk made Antwerp rich. In 1600 the Emperor of Austria, who visited the workshop of one of the principal diamond cutters, raised this industry to the rank of art.

In the mean time Amsterdam, which was, through the development of its commerce, in more direct communication with the countries of production, diverted a great part of the Antwerp diamond trade, which greatly languished under the Austrian rule. It was still more depressed under the French domination, and it was only in 1824 that large orders from foreign countries produced a revival.

The first steam diamond-cutting machine came into use in 1840. Since that epoch the diamond trade has undergone many vicissitudes, but it is still flourishing and of great importance in Antwerp. About 800 workmen are employed there in cutting and polishing the rough stones, of which the largest quantity is imported from the Cape.

The amount of capital invested in that industry is about \$4,000,000; the salaries paid to workmen alone amount to about \$1,200,000 annually.

BELGIAN CARPETS.

The exportation of carpets and oil-cloths manufactured in Belgium is steadily increasing, and in consequence of the improvements made in the machinery employed, foreign competition for these articles on Belgian markets has been defeated, and Belgian carpets and oil-cloths are more and more appreciated in foreign markets.

OTHER INDUSTRIES.

The principal other industries of Belgium are the manufactures of biscuits, starch, candles, cigars, varnish, and chocolate. All these trades generally complain of the anomaly of customs tariffs, which sacrifice the interests of Belgian manufacturers and consumers to those of foreign competitors.

CHARLES F. THIRION,
Consular Clerk.

UNITED STATES CONSULATE,
Liverpool, September 25, 1880.

AMERICAN TRADE IN EUROPE, AND HOW TO INCREASE THE SAME.

REPORT BY CONSUL TANNER, OF VERVIER, BELGIUM.

Though the untiring energy of the Department of State for the past four years has placed American commerce and industry on a higher plane than it has ever before attained, there remains still much to be done before it reaches that high point we may reasonably expect of it. While it is conceded that American ingenuity has brought thousands of things of every-day use to greater perfection than can be found to exist in the same articles here in Europe, yet this perfection is ignored or does not meet with the patronage that it deserves. This is not because the people here do not wish to patronize the best, but it is because the best is not brought to their notice.

It seems to me that the most practical way to make known our articles, that we have a right to expect to become regularly established articles of trade, like the sewing-machine and other things, is to do it on the same principle that rival houses compete with each other in the United States, namely, by traveling agents. There are—as all Americans know who have been to Europe—many well-known articles of common use with us that only require an introduction here to become established articles of commerce.

With an intelligent and experienced agent, who is acquainted with the article to be introduced and who can explain it in all its details, the superior article is sure to take precedence here.

The success of doing business by agents in the United States seems to be the best proof of its practicability. If it had not been a good system it would have long since ceased, whereas it shows no signs of abatement. If we did now the full ratio of business that we will assuredly do at some future day with Europe, American soliciting agents would be as frequently encountered here as they are in the producing sections of the United States, in order to compete with rival firms.

It is common for New York houses to send their agents to all sections of the United States, as far west as California, and to our Southern States. With an equal, and in some instances with less, expense, they could send them over a good portion of Europe. I have no doubt that reduced rates could be had for such agents on most of the lines between Europe and America. Traveling in Europe is only expensive to those who have a great deal of baggage.

The language presents an obstacle from an American stand-point, when in reality it is one of the easiest difficulties to overcome. It would be better for such agents to know French, or even German, but with nothing but English they will find little trouble, as most of the business men here either know English or have persons about them who do.

If our business men will only catch one spark of the energy and enthusiasm that is manifested in their behalf by the Department of State, and will grapple with foreign competition as they do with that of home, the inquiries contained in your circular of July 1, 1880, as to the best means of increasing American commerce and industry in my consular district, are answered, and satisfactory results are sure to follow. If, too, some one would visit those countries which stand in the most important relations to our commerce and industry, who feels a genuine interest in their promotion—one whose position and influence is felt at home; whose

energy and enthusiasm are known on these subjects; one whose brain can form new creations out of such elements as the circumstances afford; who can conceive that which is really needed, independent of existing laws and regulations; whose opinions, when expressed, will rivet public attention and cause action in the quarter where it is most needed, and excite in others some of the energy he feels himself on these subjects, practical results will follow. If the head of the Department of State will do this, the result will be of incalculable benefit to our commerce.

GEORGE C. TANNER, *Consul*.

UNITED STATES CONSULATE,
Verviers, October 5, 1880.

AMERICAN MANUFACTURES IN BELGIUM.

REPORT BY CONSUL WILSON, OF BRUSSELS.

Of all civilized countries there is probably no one into which it is more difficult to introduce American manufactures than into Belgium. Possessing great mineral wealth, as well as all the latest and most improved kinds of machinery for manufacture, and with a population largely made up of skilled workmen and artisans of industrious and frugal habits, who are contented with moderate wages, she can and does produce almost every variety of goods and fabrics necessary either to supply the wants or gratify the tastes of her people, at prices scarcely excelled for cheapness and quality by any other nation.

Nevertheless our manufactures are slowly but surely finding their way into this country. The inventive genius and restless activity of our people have produced many of the smaller articles used in the daily life of the people that already recommend themselves to dealers here; and although their sale is yet insignificant as compared with that of our great food staples, there can be no doubt that honest work, persistent effort, and, as far as possible, a conformity to the styles and patterns in traditional use here, will in the end secure for us a large market for the more important articles of our manufactured merchandise.

During the last year the aggregate value of our sales to Belgium of all denominations of manufactures was \$3,520,180, and for the future, with our unequaled wealth of raw material, our constantly increasing influx of skilled labor, our cheap food, and ingenious machinery, if we will but observe the above-named conditions, we may reasonably expect yearly to increase the value of these exports.

But so far as this country, at least, is concerned, it is impossible for us to expect a rapidly developed trade in manufactures. In addition to the opposing influences already mentioned, it must be remembered that geographically Belgium is situated in the midst of the great manufacturing countries of Europe, consequently the transport of merchandise purchased from any of them is quick and inexpensive, which in itself is an important factor in determining the current of trade between countries. But this proximity to the great European centers of manufacture has for the Belgian dealer yet another and important significance. Under the ever-varying phases of mode and fashion in all styles and forms of manufactured articles, it is generally a losing business for a dealer to lay in a large stock of any one kind of merchandise at a time, and hence the consideration of being able, with the least possible delay,

and at the least possible expense, to fill an order for which he may not have the goods on hand will always induce him to purchase what he can procure at home, from contiguous countries, unless influenced by the strongest pecuniary or other motives to the contrary. These considerations doubtless account for the fact that in Central Europe so few large wholesale establishments are found in the great cities or centers of manufacture; and in my opinion they are, and will for a long time continue to be, the greatest obstacles we will have to encounter in introducing our manufactures into Europe.

It is folly for us to shut our eyes to these facts, or to flatter ourselves that they do not exist. They do exist, and nothing but such a display of superior quality, design, workmanship, and adaptability to the uses for which our manufactures are intended, with honest dealing and small profits on the part of our exporters, will, to any important degree, neutralize their effect, and to accomplish even this we must not be impatient. To the outlying, insulated, and less-advanced countries of the world, where large stocks of merchandise, less subject to the whims and changes of fashion, may be accumulated at convenient centers, we may justly look for a rapidly increasing and remunerative trade in our manufactures, but that we will in any near future and to any great degree, possess ourselves of the markets of this country for the great majority of these articles is, to my mind, an over-sanguine idea. But the very causes that tend to shut out our manufactures from Belgium and other manufacturing countries open up for us a not less profitable traffic.

The teeming millions of the southern and central portions of this continent that now, in such juxtaposition, are engaged in producing every species of manufactured merchandise, must be fed; and in the rivalry of these European states for cheap manufacture, cheap food for their workmen must always be an important element; but this cannot be produced in the neighborhood of belching smoke-stacks, glowing furnaces, and flying shuttles. These old nations of Europe have too dense a population and too unfruitful a soil ever to become our rivals in the cheap production of breadstuffs, and to continue our rivals in manufacture they must buy their food-produce from us. This being the case, it would be just as great a folly for any one of them to attempt to shut out the food-produce of the United States by import duties, as for us to expect, in any near future, to supply them with their manufactures.

With our superabundance of coal, our inexhaustible beds of iron and other ores, our forests of fine timber, and our unequalled adaptability to the growing of cotton, there can be little doubt that with a well-adjusted system of protection, we will, in time, be able to sell to Europe, in large quantities, many of the manufactures into which iron and wood largely enter, such as agricultural machines and implements, cheap furniture, panel-doors, window-sash, and other woodwork, locks, hinges, hardware, cutlery, and ironmongers' wares generally, as well as cotton goods, leather and leather goods, including cheap boots and shoes; but beyond this we ought not to expect, at least in the near future, a great extension of our trade with Europe in manufactures, and should be contented if we can so supply our own people with the finer classes of manufactures as to no longer make it an object for them to spend the immense sums of money they now do in foreign purchases. In the development of our food-produce, and its cheap transport to foreign markets, we have the sure promise of unlimited national wealth, and to this we cannot devote too much energy, nor will any amount of money spent either by the national government or other corporations to encourage new lines of

steamers or cheap freight lines of land transport, be badly invested if it but cheapens and facilitates the transport of the products of our soil, of which the nations of Europe will henceforth continue to have increasing need.

JOHN WILSON, *Consul.*

UNITED STATES CONSULATE,
Brussels, October 19, 1880.

DAIRY THRIFT IN DENMARK.*

REPORT BY CONSUL RYDER.

Dairy report No. 1.

From the results of the lately-carried-out experiments which Professor Fjord brought before the meeting of the Royal Danish Agricultural Society on the 12th day of May last, I have the honor to submit the following: As usual, the lecture was illustrated by full tables, clearly demonstrating the several experiments and results obtained.

The lecturer pointed out that the centrifugal experiments might be looked upon as a continuation of those reported during the previous year in my dispatch No. 109. The Lefeldt's centrifuge, for 200 pounds milk, which had been used at Anno, was, in the beginning of May, last year, removed to Rosenveltdt, near Vardingborg; at the same time a larger Lefeldt's centrifuge, for 400 pounds milk, was procured, which, similarly with the first, was self-scumming, but not of constant working, so that the centrifuge must be stopped, emptied, and sweet milk each time renewed relatively with 200 and 400 pounds milk. At the Rosenveltdt's dairy, of 200 cows, a change was at the same time made from the tub to the centrifuge system, and the milk has there been worked during the year after that system. During this period there have altogether, in 140 days, been carried on similar experiments between the three systems of centrifuge—"ice" and "tubs" (to which the dairy each time contributed 600 pounds milk, divided in three equal parts)—whereas, on other days, similar centrifuge experiments have partly been carried on, and partly experiments with driven milk, likewise with 200 pounds in the separate trials with the smaller, but with 400 pounds with the larger centrifuge. The cream is soured; the butter treated as an article of merchandise; it is kneaded by the dairy people and each test trial is weighed by itself, after the first kneading—that is to say, unsalted. It is afterwards returned to the dairy for salting and kneading. It is probable that, in the first weighing, a greater difference in the water mass in the butter has shown itself compared with the experiments of last year, when the butter was fully kneaded before weighing; but the average tabular figures can, without hesitation, be equally depended on as formerly, which has also been confirmed by chemical analyses.

In the extensive experimental trials in comparing the centrifuge, ice, and tub systems the small Lefeldt's centrifuge only was used; likewise was that one used as normal meter in the experiments with the large Lefeldt's, as also with the centrifuge (separator) delivered by Neilsen and Petersen, of Roskilde. The centrifuges could be made to give dif-

*The previous reports on "Dairy thrift in Denmark," referred to in this report by Consul Ryder, will be found in the supplement to Commercial Relations for 1879.

ferent rates of rapidity in making use of different belts. The rapidity was controlled by tell-tale clocks, standing in connection with the centrifuges, and recorded the number of revolutions which the centrifuges executed, and when, for example, it was reckoned that the centrifuge, with a rapidity of 950 revolutions in the minute in full play during $36\frac{1}{2}$ minutes, should make 33,000 revolutions, the centrifuge was not stopped before that number had been reached, and thus when the centrifuge, in consequence of friction of the bands or a variation in the machine's course, was, at times, too slow, so the working of the centrifuge continued a responding longer time. The same as last year experiments were made over the parts which the time occupied and the rapidity obtained in the working of the centrifuge exercised on the product of the butter. From these it was shown that with regard to the time the loss of butter was 4.3 per cent. in accordance with the working of the centrifuge lasting $36\frac{1}{2}$ minutes or 27 minutes, with a rapidity of 950 revolutions to the minute, and that the loss was 3.5 per cent., according to the centrifuge in one and the same time (tried with 27 minutes) worked with a rapidity of 950 or 860 revolutions in the minute, which results fully coincide with those reported by me last year in my dispatch No. 109. The class of experiments on which the lecturer more especially dwelt were those in which he sought to demonstrate that both the small and large Lefeldt's centrifuge's powers of cream separating seemed capable of being brought to a mathematic-physical law; namely, that this power is one and the same—when the centrifuge's working power is equal—that is to say, the square of the revolution strokes multiplied by the turning radius. With this law as a starting point (the time before full swing was obtained being obtained, being calculated at one-third of the time under full play), it was reckoned that the small centrifuge with 1,040 revolutions in the minute for 31 minutes, with 950 in $36\frac{1}{2}$ minutes, and with 860 in 44 minutes, should yield an equal produce of butter, and that likewise with a shorter time than required for a satisfactory cream deposit should 950 revolutions in 27 minutes or 860 in 33 minutes yield the same product of butter; and further, that the larger centrifuge, with 940 revolutions in $34\frac{1}{2}$ minutes, or with 880 in $37\frac{1}{2}$ minutes, should give the same yield as the smaller one, with 1,040 in 31 minutes, or 950 in $36\frac{1}{2}$ minutes. Out of seven columns with these experiments were the medium numbers precisely similar in the five, whilst in two of them there was a deviation of 0.3 per cent. But when the centrifuges work after such rule, it will follow that when a fixed rapidity and time are regulated for a satisfactory separation of cream a reduction in the time without increase of rapidity, or, what will sooner take place in practice, a diminution of rapidity without increasing time, will occasion a loss of butter. By experiments this loss was counteracted by the use of tell-tale clocks, but this showed at the same time that the average rapidity on different days could vary as much as 15 per cent., notwithstanding that the steam-machine was under the care of a practised and responsible mechanic. The chief cause of this arose from the band frictions. They are both dependent upon the bands straining, &c.—also, how much work is placed on the main shaft—so far as the power is carried to this from the engine by bands, which was the case at Rosenveldt.

From these experiments it is evident that, when the manufacturers state that a centrifuge can work up a certain quantity of milk in the hour, such statement is only of consequence when it is, at the same time, shown how cleanly it scums, and its correctness in practice becomes not

only dependent upon the correctness of the manufacturer's calculations, but also upon the centrifuge continuing to work with the calculated rapidity. For fuller safety it will be best that the centrifuge is provided with tell-tale works; otherwise it will be advisable to let it run a somewhat longer time than might be thought needful, in case the centrifuge should lose partly in its rapidity.

Neilsen and Petersen's centrifuge is now quite different from that with which the lecturer experimented last year. It is now made to work in full continuation; so that there is a constant flow of sweet milk and draining of cream and scummed milk, and can also be used in such manner that the cream is left behind in the centrifuge whilst the scummed milk is drained off without causing any loss in the produce of butter, as could be judged by the experiments carried out; but the centrifuge should be stopped and the creamer emptied after the lapse of an hour. With similar experiments the small Lefeldt's centrifuge worked at 950 revolutions in $36\frac{1}{2}$ minutes, and, with the time for emptying included, could barely work up 300 pounds of milk per hour, whilst Neilsen and Petersen's, which holds 125 pounds, worked with a rapidity of 1,500 revolutions, and worked up 500 to 600 pounds of milk per hour. It yielded therewith about 5 per cent. more butter than that of Lefeldt's, and left behind on an average 0.19 pound fat in 100 pounds of scummed milk, whilst Lefeldt's left 0.35 pound; but its process of scumming had this fault, that not a little scum was shown both on the cream and scummed milk, wherewith some besprinkling of scummed milk took place. An improvement is, however, being made in these days in its construction, by which, judging after an experiment made when the lecturer was present, the besprinkling and the scum from the scummed milk will doubtless be removed. The scum on the cream did not injure the produce of butter; but on the other hand the lecturer after several investigations could not give a decided opinion as to what extent it might injure the quality of the butter. As a natural consequence, this scum will not appear when the cream is left behind in the centrifuge; but whether this thick and partly clodded cream which thus appears will give fine butter the lecturer did not dare give any decided opinion. Nevertheless, Lefeldt now recommends a centrifuge on the same system, but so regulated that the cream can be thrown out once every hour during the working.

The chief interest was manifested, however, in the lecturer's chief experiments—a comparison between the centrifuge ice and tub systems. With the ice cooling a 50 pound bucket was used with a milk depth of 16 inches, and a scumming time of 34 hours. The ordinary scumming time for tubs was also fixed at 34 hours, but out of regard to the state of the milk from the end of May to the middle of September it was reduced to 25 to 30 hours. Up to the 2d of September the centrifuge worked with a belt, which was regulated for a rapidity of 1,040 revolutions per minute, during 31 minutes (the rapidity was, however, frequently somewhat less, and the time longer), but in August the centrifuge commenced to shake at that rapidity and the ice system had the upper hand. On the 3d of September the rapidity was reduced to 950 revolutions per minute, and the time was increased to $36\frac{1}{2}$ minutes. With this rapidity the centrifuge worked easily until the latter days in April, when it again began to shake. Strange to say, it would work easily one day and shake the next without any apparent reason. As it is, without doubt, the only course of experiments of the kind, where at the same place a fully carried out comparison has been made between the older

systems—ice and tub—as against the centrifuge system, I have thought it best to give printed tables, wherein the monthly working results are shown :

Monthly working results.

1879.	Pounds milk one pound butter.			Proportion between centrifuge ice and tub.			Difference between ice and tub.		Days of experiments.	Centrifuge has yielded more butter in per cent.	
	Centrifuge.	Ice 34 hours.	Tub.	Centrifuge.	Ice 34 hours.	Tub.	Ice 34 hours.	Tub.		Than ice.	Than tub.
May.....	27.16	30.10	30.4	100	92.13	90.16	100	98.16	14	8.13	10.4
June.....	26.4	28.3	28.8	100	93.2	91.2	100	98.10	21	7.13	9.16
July.....	26.8	28.0	30.5	100	95.7	87.9	100	91.8	7	4.5	13.8
August and 1st and 2d September.	28.5	27.7	31.7	100	103.2	90.1	100	87.4	9	3.1	11.0
From September 3d.....	26.6	27.6	30.9	100	96.4	86.2	100	89.5	10	3.7	16.0
October.....	24.3	28.7	27.9	100	84.7	87.10	100	102.7	18	18.1	14.9
November.....	24.6	31.5	28.4	100	78.1	86.5	100	110.8	9	28.0	15.6
December.....	24.2	28.5	27.4	100	84.9	88.4	100	104.2	9	17.8	13.1
1880.											
January.....	25.8	27.8	28.0	100	92.9	91.9	100	99.10	10	7.6	8.8
February.....	26.4	27.4	27.8	100	96.3	94.9	100	98.6	10	3.8	5.4
March.....	27.8	28.8	29.5	100	90.4	94.3	100	97.8	17	3.7	6.0
April.....	28.8	29.4	30.1	100	96.1	94.0	100	97.8	7	4.1	6.4

It is thus shown that in the months from January to June there is but a trifling difference between the ice and tub systems, which is in accordance with the lecturer's previous extended experiments; when the month of June is excluded, where the tubs in former years have yielded a smaller produce of butter, in July, August, and September the ice system has the upper hand with about 10 per cent.; on the other hand the tub system has the upper hand in the months of October, November, and December, when there is heavy milk from the longer milking cows. This proportion during the summer and autumn is also in accordance with former experiments; that at Rosenveltdt only has not been so heavy during the autumn months as in the former experiments at Councillor Tesdorpf's estate.

The quantity of milk used for one pound of butter with the ice system does not exceed $31\frac{1}{2}$ pounds. The centrifuge had, however, at all times the upper hand, with the exception of August, when it shook. Still, the difference in the time from January to September is not greater than the surplus that can be lost, either when the centrifuge works with less ease, or with too little rapidity, or for too short a time. Of special interest is the experiment during the autumn months; in these the centrifuge has a decided superiority, and that even over the tub system, and has in these yielded a considerably larger quantity of butter than in any of the other months. This peculiarity with the centrifuge in separating the fat so well from the heavy milk, in conjunction with its ability to work the transported and cooled milk, is the point in the experiment which mostly recommends the new system.

The control over the experiments by chemical analyses is, as usual, carried on at Stein's laboratory, by Candidate Storsk, with extreme exactitude. From the herewith inclosed extensive tables it is shown that, whilst in the first butter samples that were taken after the first kneading in an unsalted state, there was a greater difference in the water

mass than in the samples of previous experiments; on the other hand, there was but trifling difference in the samples taken after the salting and second kneading. The inequalities disappeared, nevertheless, in the sectional tables, and the analyses proved that the cause of a difference in the weight of butter in the three systems was neither occasioned by a difference in the amount of water or of other substances in the butter, nor was it owing to the circumstance that the fat was more easily churned from the cream in the one system than in the others. Of the buttermilk from 100 pounds of sweet milk there only remained .07, .06, and .07 pound of fat relatively, from the centrifuge, ice, and tub cream.

The ground for the superiority in the centrifuge system must solely be attributed to the smaller amount of fatty substance left behind in the skimmed milk—that is to say, in its more complete cream deposits—and this is fully born out in the analysis of the skimmed milk. The fatty matter in 100 pounds of skimmed milk had in the centrifuges kept between .25 and .44 pound; with the ice samples between .34 and 1.54 pounds (heavy milk in November); with the tubs, between .40 and 1.03 pounds (November); and on the average of 12 contemporary trials, divided over the whole year, the fatty substance was .35, .62, and .68 pound, respectively, in the centrifuge, ice, and tub systems. The difference is thus between ice and centrifuge $.62 \div .35 = .27$; between tub and centrifuge, .33; and between tub and ice, .06, which difference, as nearly as possible, may be calculated as giving a similar amount of difference in the weights of butter from 100 pounds of sweet milk. Thus, for example, when the weight is $3\frac{1}{2}$ pounds, then will the difference .27 represent a difference in the weight of butter in percentage of 27, or about 8 per cent.

The third section of the speaker's lecture treated upon experiments on the influence which the transport, repose, cooling, or warming of milk might have on cream deposits; also, experiments of special interest to co-operative dairies. The lecturer, in 1877 at Ourup, and in 1879 at Slagelse, carried out a couple of experiments on a smaller scale of a similar description. At Slagelse dairy, Schon, jr., in 1878, made some experiments which point in the same direction as the lecturer's; furthermore, the lecturer has been informed that at several places it has been tried to warm up the transported and cooled milk. First were two experimental trials reported from Rosenveltdt, to which 800 pounds of milk were daily used, and whereof 200 pounds were immediately centrifuged and 200 pounds after transport; in similar manner were 200 pounds immediately provided with ice and 200 pounds after transport. Both experiments continued during 34 hours after the placing in ice. In one class of these experiments the milk was driven for two hours with 100 pounds in each bucket, and had, on its arrival, on an average of 18.8°C .; in the other the milk was first cooled for half an hour in water, or iced, then driven for $1\frac{1}{2}$ hours and retained 12°C . As the milk at the co-operative dairies is often delivered in small quantities, and stands over for some time before the arrival of the milk carts, this last description of experiment will, without doubt, apply more closely to the relative state of conditions in the co-operative dairies. It was thus shown that the centrifuge could separate the cream nearly as well from the driven as from the undriven milk, as the proportionate figures for loss of butter with the centrifuge were 100 pounds for the immediate, 99.3 for the driven, and for the cooler and driven 98.8; the loss thus amounting to 0.7 and 1.2 per cent. only. With the ice system the loss of butter on the driven milk was on the other hand much larger, viz, respectively, 4.4

and 8.8 per cent. on the two trials with 18.8° and 12° C. In another mode of comparison in similar experiments the following proportionate figures were found in the produce of butter with centrifuge and ice, namely, for the immediately worked 100, 94.8, and for the driven 100, 90.7, for the 18.8° cooled, and 100, 87.3, for that cooled to 12°, which last proportionate figures approach very nearly to those contained in my report of last year for the bought milk at Anno. The lecturer was aware that the cold milk had created scumming difficulties in the centrifuge dairies; at Rosenveltdt these were overcome by scumming rapidly in the beginning, immediately after the centrifuge was in full play. Last year the centrifuge experiments with the driven milk at Slagelse did not show so favorable a result; the lecturer could not determine if this arose from scumming difficulties.

Although everything thus tends to show that the centrifuge is specially adapted for minor dairies, it still appeared to the lecturer not unimportant that one should know something more of the characters of the driven and cooled milk with regard to their cream depositing than was now generally the case, before it could be decided which system was most to be preferred for the minor dairies, and in order to throw light thereon a number of experiments has been made at Slagelse dairy from the 8th March to the 8th May, but only with the ice system. The milk has partly been placed in ice at once, partly after repose and transport, and the scumming time, which for the several trials is the same, is always reckoned from the time it is placed on ice. Consequently the milk for the several trials was mixed together. The first research made by the lecturer was to ascertain if the cream setting was most injured by the shaking or cooling given in the column. The heating of the samples for the two last columns to 30° and 40° were made in water baths respectively of about 45° and 55° warmth.

Proportionate table for the production of butter and the temperature C° of the transported milk.

Description.	In ice.				
	Immediate.	After carriage.			
		Not warmed.	8°.	30°.	40°.
Slagelse:					
Thirty-four hours' scumming, driven two hours, six experiments	100	95.7	20.2	97.2	98.6
Cooled one-fourth hour, driven one and one-half hours, six experiments in April	100	91.10	12.5	93.6	98.5
Cooled one-half hour, driven one and one-half hours, five experiments in March	100	86.3	9.3	92.9	99.1
Cooled one hour, driven one and one-half hours, four experiments in April and May	100	86.7	9.0	.....	98.9
Ten hours' scumming, cooled one-half hour, driven one and one-half hours, four experiments	100	83.3	11.3	87.0	97.7
Ten hours' scumming, cooled 1 hour, driven three and one-half hours (rail), four trials	100	70.6	8.7	.....	96.8
Rosenveldt:					
Thirty-four hours' scumming, cooled one-half hour, driven one and one-half hours, five experiments	100	89.4	10.8	90.0	95.6

Some of these experiments were made in connection with those reported in the former table, and the figures in the second column give nothing new; on the other hand, the figures in the columns for heating

to 30° and 40° show that the heating to 30° has helped somewhat but not much, whereas the heaviness for cream setting produced by cooling and transportation is nearly entirely removed by heating to 40° C., and that not only for 34 hours' scumming, but also for 10 hours, where the butter loss on 1 hour's cooled and 3½ hours' driven milk was reduced from 29.4 per cent. on the cold sample to 3.2 per cent. on that heated up to 40°. Nevertheless the lecturer drew special attention to the circumstance that, in the last class of experiments which took place at Rosenfeldt, the heating up to 40° did not give so favorable a result as at Slagelse, and that the milk for the experiments at Slagelse, which came almost exclusively from a stall in close proximity to the dairy, had all the time been of normal condition. Although he would thus caution against forming too generally valid conclusions from these experiments, yet can there scarcely be a doubt but that in many cases the heating of the milk to 40° after carriage will produce an increase in the yield of butter, and that the increase will be so much the more the cooler the milk is when it arrives at the dairy. During the cool season of the year this warming up thus appears to be of special consequence to the minor dairies, and in the warm season one can just let the milk be cooled during transport. Three classes of experiments were made over this, whereof the following table will show the general results in figures:

Table showing proportion of butter produced as well as the milk's temperature with the use of ice.

Description.	In ice.				
	Butter.	After repose.	After transport.		
			Wagon.	Wagon and isolated.	Railway and wagon.
Thirty-four hours scumming, driven two hours, three experiments, proportionate figures	100	95.10	96.15	98.14	96.18
Temperature C°	27.19	27.16	17.19	23.6	19.3
Thirty-four hours scumming, cooled in ice one hour, driven of standing over one and one-half hours, four experiments, proportionate figures	100	87.1	86.7	.....	.....
Temperature C°	31.4	9.2	9.10	.....	.....
Ten hours scumming, cooled in ice one hour, driven or in repose three and one-half hours, four experiments, proportionate figures	100	73.0	.....	.....	70.6
Temperature C°	31.3	8.8	.....	.....	8.7

The standing-over milk was used outside the dairy, whilst the other samples were driven. In the driven and isolated trials the bottles used in driving were wrapped up in cloths; in the railway transport the milk was driven in a cart between the dairy and the station twice during ten minutes, and on the railway on the first trials from Slagelse to Söro, and immediately back again—altogether 16 English miles; on the last experimental trial from Slagelse to Borup, and, after half an hour rest, back again—together, 44 English miles. Judging from these trials, it is the cooling from which the milk has suffered, in conjunction with the time that has elapsed before it is brought to the ice, that seems to be the chief cause of the loss of butter; for whereas this loss increases with the cooling, so on the other hand the carriage, or shaking during carriage, does not appear to have had any, or, at any rate only a trifling, influ-

ence. The transportation in wagons was, however, carried on with slung bottles and on wagons with springs.

With the next row of experiments it was shown that the milk, after carriage, could, as to the setting of the cream again by warming, be brought somewhat to a normal condition. After some experiments with the centrifuge cream meter, constructed as a controlling apparatus for the lecturer's experiments, he had observed that the cooled milk, as regarded the cream setting, suffered a striking change with a degree of heat approaching to the low temperature of 38° to 39° C., and experiments were therefore made in heating the driven milk both to 40° C. and to that warmth which the milk generally contains when it is brought from the stalls to the dairy, namely, 30° , which temperature all the trials in the first column—"in ice immediately"—have likewise about contained, whilst the three other experiments, after transportation, had the C. temperature at the place from which it was sent, so that it could arrive first at the dairy, and when it is afterwards heated up to 40° C., one would be enabled to obtain a satisfactory butter product, even if several hours were occupied in the transportation. That the cooling and transport is most fatal to the previous heavy milk, seems to be elucidated by the experiments reported last year in my No. 109; on the other hand, the lecturer was as yet ignorant in what manner the warming will operate on such milk. The lecturer had, however, been promised by Councillor Tesdorpf an opportunity for renewing these experiments.

The lecturer thereafter drew attention to the strange peculiarities in cream from the cooled, driven, and subsequently rewarmed milk up to 30° C. Whilst with careful scumming the cream mass was nearly similar to the three other samples, namely, 16 per cent.—it was at this time 18 per cent.—in which the churning time had been twice as long in the trials with 30° as compared with 40° samples, and that both in sweet and sour churning. The assistant who had taken charge of these experiments, and who was a very experienced dairyman, had thereby shown that cream from 30° samples, although it weighed most, was by no means, according to judgment, the most fluid; on the contrary, it was precisely of that description which is most desirable in housekeeping, whilst the cream of 40° sample, which yielded most butter, to all appearances was proportionably thin.

The lecturer next read two tables over some very curious churning observations with "sweet churning." With centrifugal experiments made in March, 1879, at Slagelse dairy, it had been shown that when the centrifuged cream attained $14\frac{1}{2}^{\circ}$ to 16° C., and then was immediately cooled to a churning temperature of 14° and was churned, there was obtained 17 per cent. less produce of butter than when the cream was first cooled to 1° and afterwards warmed up to 14° , and then churned; a cooling to 8° gave somewhat the same result as a cooling to 1° . With a more extended class of experiments, which he had had taken at Rosvaug by an assistant in November and December last year, with cream set in tubs, partly at a temperature below 13° C., and partly over 16° , it was ascertained that when the tub cream was formed at a temperature below 13° C., but little advantage was obtained, namely, 2.3 per cent. more butter, with the cream cooled in ice before it was heated to the churning temperature, whilst in the trials of over 16° was obtained 19.2 per cent. with cooling. Although the difference had shown itself to be important in some experiment with sour churning, the lecturer held, however, that he could learn through his experiments at Slagelse, that it was preferable in the experiments at Rosenfeldt to allow the centrifuged cream and likewise the tub cream, during the warm

season of the year, to be cooled with ice. The dairyman of the place followed the same mode of procedure as concerned the dairy itself, inasmuch as he found it easier to make fine butter with the cooled than from the uncooled centrifuge cream, and from information obtained with later experience taught in Sweden with cream from the Laval separator, it is found to be necessary to cool the centrifuged cream. As it is furthermore customary in many dairies to cool the butter in ice between the first and second kneading, which was also done at Rosenfeldt, so it would appear that the centrifugal dairies could not well be without cooling materials, and this should doubtless not be overlooked when a comparison is made between the centrifuge and ice systems.

In conclusion, the lecturer observed that, to the many questions which were put to him as to how far he would advise this one or that one to go over to the centrifuge system, he could only give the reply which was contained in his present delivered report. Of the butter's quality he dared scarcely to utter any positive opinion; and even if the butter from the several centrifuge systems was equally good and just as fine as with the ice system, he must also speak with the same caution. Lefeldt's small centrifuge had, with the exception of irregular working in August and in April, proved itself to be a very good article, whilst there could only be made the objection that, in proportion to the working power it demands and to its cost, it does not execute sufficient work. Lefeldt's larger centrifuges were still heavier to work, and the sample at Rosenfeldt, the same with a similar one at Malmö, had been the cause of so many vexatious troubles in the first year that doubtless they will not be recommended from these dairies; but to this must be added that Lefeldt himself seems to have forsaken this system, and recommends centrifuges of entire or part continuity, of a new construction, which the lecturer as yet had only seen on paper. As before mentioned, Nielsen and Petersen's centrifuges have also been altered, and under these circumstances it is impossible to give any advice. The lecturer then returned his thanks for the assistance which on all occasions had been offered to his experiments by Mr. Oxholm, at Rosenfeldt, and Mr. Busk, at Slagelse, as well as to the indefatigable and careful work rendered by his assistants.

HENRY B. RYDER, *Consul*.

CONSULATE OF THE UNITED STATES,
Copenhagen, August 15, 1880.

THE UNEQUAL COLORING OF BUTTER.

REPORT BY CONSUL RYDER, OF COPENHAGEN, ON THE CAUSES OF THE UNEQUAL COLORING OF BUTTER AND ON THE REMEDIES THEREFOR.

Dairy report No. 2.

I have the honor to transmit herewith subjoined a report on the causes of unequal coloring of butter and the remedial preventives thereagainst, from a lecture by Professor Selge.

Notwithstanding that butter should be of one color throughout in order to obtain the highest price, a large quantity thereof is brought forward which is greatly deficient in this respect. One might, therefore, be led to believe that it was difficult to produce equally-colored butter; but such is far from being the case when one knows what can be the cause of such irregular coloring. In such respect it nevertheless still

falls short in many dairies, notwithstanding the reason has frequently been explained; chiefly because those who most require assistance do not seek it where it is to be found. In order to correct this, I shall in the following give a short *résumé* of the cause of irregular coloring of butter, with its remedial preventives, while by degrees speaking of the different sorts of unequally-colored butter, and in order not to make the subject more intricate than necessary, constantly presuppose that the butter receives its coloring during the churning by the employment of fluid butter-coloring without its being thereby taken for granted that the irregularity in color is specially bound to the coloring matter, because, as will be shown hereafter, the butter can also be unequally colored, even when no coloring substance is used, such as in the cases Nos. 1, 4, and 5.

1. White spots, which in time become green, which is cheese-corn, up to the size of a pea, irregularly distributed about in the butter, are produced:

a. With normal milk, only in the case where there is produced soured butter, and one does not duly keep within bound the temperature of the cream-tub after the thickening has commenced, because the thickening is due, by acidity, to the separated cheese matter, and its proneness to clod together increases with the warmth of temperature. With 10° to 12° Reaumer this cannot be remarked, but it can with 15° to 16° Reaumer, and in a high degree with 18° to 20°. If now the heat temperature has favored, which the cream has at the period where the cheese mass is separated or at a later period, a strong clodded mass of divided cheese pulp, and a contraction of this to hard grains, and when one allows the heat ample time to continue its hardening influence on the cheese grains, these then become so firm that they no longer are broken in the churning, and a part thereof would always again be found in the butter, easily perceptible by their conspicuous snow-white color. If the cheese-corns later on have time and opportunity to get moldy they become green, and they are often mistaken for verdigris. The danger of cheese-grains in the butter is in consequence specially to be noticed when sour cream or milk stands over a long time before churning in very warm localities (during summer in a warm dairy-room, in winter near a stove), as well as by the use of cream-warmers without a careful stirring, and the remedies against this are here given. One must so regulate the heat temperature at the time of souring that the cream, irrespective of what degree of heat it may previously have contained, at the time when the thickening takes its commencement until it has cooled so much that cheese-grains can no longer be formed, and should this not succeed, one must then cool it by uncovering, airing of the locality, reversing into other tubs, placing in cold water, or by other means.

b. With changeable milk, which suffers from sickness, so-called "cheese in the cream," when such milk is put away for cream forming in flat pans in a warm dairy chamber, it would appear to give a tendency in such milk to the formation of watery matter, or of a substance with power to separate the cheese matter. In either case there quickly flows thick milk at the bottoms of the pans, and a cream is taken off which congeals even before it is taken from the milk, and even before it is so sour that the congealedness can be attributed alone to the acidity. If butter is secured from the cream there will always be found white cheese-grains in it. The fault is to be remedied by allowing the cream formation to pass off in deep buckets in cold water, so that the rapid cooling operates against the development of the sickness.

2. Colored spots—red, yellow, or dark brown—or grains of the size of a

pin's head, unequally divided here and there in the butter, appear when there is found in the liquid butter-coloring substance fast color particles, which being introduced into the butter, will not permit it to be kneaded, and are perceptible by their strong, conspicuous color. If such color spots are observed in the butter, one must before such coloring is again used, either strain it through a cloth or save it from color sediment by carefully pouring the coloring matter over and over into another bottle, and later on repeat it when the danger is apparent. The danger is especially imminent when a sediment has formed itself in the butter-coloring matter and the latter has had time to cake itself fast, but not faster than that a good shaking will allow pieces to be loosened from the color crust which has formed itself on the bottom and sides of the bottle.

3. Layers of unequally colored butter. If butter is put down in casks or jars, each churning by itself, and two or more churnings are required to fill the same, each layer can have an equal color for itself, whilst the different layers be of different colors. The butter is therefore styled as bad, and justly, as being irregularly colored. This fault can have its origin in, (a) that the applied coloring substance has not been of the same quality in the different churnings, which, for instance can occur when at one churning one coloring has been used from one bottle, and in the succeeding ones it has been taken from another (it is to be understood that the color is not one and the same), or when one uses the color from the same bottle, but that dregs are found in it and that the bottle is shaken on one occasion and not on the others. (b) That to the different churnings an equally proportionate quantity of coloring matter has not been used, either because one neglects to take care of the dairy thrift, and as a sequent thereof feels the want of the necessary illustrations, so as to measure the quantity of coloring matter in due harmony with that employed in the previous churnings, or because one miscalculates from lack of a measuring glass, or does not pay sufficient attention in the measuring, or lastly because some unaccountable falling off in the produce of butter has taken place.

Should the butter from one or the other cause have been irregularly colored, one must remove the defect found in the quantity prepared by mixing and re-kneading it, and repeating this in the future before the laying down takes place, until one has learned to counteract the fault from its commencement, which is quickly learned when one can calculate and can keep a proper reckoning.

In the foregoing it is constantly taken for granted that each layer by itself is equally colored. One has, nevertheless, also in layers, butter of irregular coloring; when this is not the case—as, for example, butter of which some layers are more or less bad, though not spotted—such butter is first to be regarded as butter suffering from this mentioned defect, and if it has been readjusted by this, it will, as a whole, prove to be sufficient. In the opposite case it is a proof that one of the before-mentioned errors has been made during the coloring.

4. Gray spotted butter, that is to say, butter with dirty gray spots, is caused by a want of cleanliness in the cow-stables, or in the milking. If such milk is laid away for cream setting, a quantity of dirt will soon show itself on the surface of the cream in the shape of dark shades or spots, and with the churning is embodied in the butter, which then receives a dirty color, which generally is more or less gray spotted. This can also be the case when there is much dust in the dairy-room, either coming from the ceiling or through the shutters and windows; though this is more seldom, as one is more careful, as a general rule, in this respect.

5. Yellow-spotted, variegated, marble-veined butter; that is, butter in which light colored patches, now in large pattern, then in small pattern shape, pretty equally, is exchanged with parcels having the desired color, is produced when one allows too much of the buttermilk to remain in the butter, or else omits a complete distribution of the salt before the laying down of the butter. In both cases the buttermilk, even when it has been well distributed during the laying down, will soon collect during the repose of the butter in somewhat larger quantities in some places than in others, more especially around the salt; and a striking change in the color of the butter will soon show itself, as it will be paler and more light colored at the places where the buttermilk increases in quantity, whilst the opposite increases in strength at the places where the buttermilk has been partially withdrawn. It is thus solely to a discordant distribution of the buttermilk, and not to the butter coloring, generally to be attributed as the cause of the butter being spotted. A rekneading is thus sufficient to remove the defect, but as this, however, only shows itself after some days' time, and many producers neglect to investigate the butter before it is sent away, the fault is thus allowed to pass until there is no longer an opportunity to correct it. Should unfavorable conjunctures occur in the butter-market, they will, however, soon learn of it; because spotted butter will then, as is too often the case, only be salable at a very great sacrifice. It is safest, therefore, to regulate one's self, so that the defect cannot occur, and it is not difficult when one keeps in mind that the causes of it arise either from a surplus of buttermilk or from an improper distribution of the salt, and, as a general rule, from both causes united, as these two generally follow each other.

With regard to the distribution of the salt one can lighten it by the use of "Lüneburg" salt, which in every way is the easiest mixed, and before using to crumple the whole somewhat (for example, by rolling it on the butter trough, or on a loose wooden tray, with a wooden roller or bottle), and finally to spread it evenly over the butter while it is being used. The chief point, as regards the distribution of the salt, as also the removal of the buttermilk, must be to get the butter properly kneaded, in proper time and in proper compass. The spotted butter leads one involuntarily into an investigation of the treatment to be carried out in regard to the kneading of butter; but as it would carry one far away from the present question, I will prefer dealing with the question of butter-kneading in another article, in which there will be occasion to speak of this in other respects, as soon as I can obtain the desired information.

HENRY B. RYDER, *Consul*.

UNITED STATES CONSULATE,
Copenhagen, October 28, 1880.

TO THE EXPORTERS OF AMERICAN PRESERVED MEATS TO FRANCE.

REPORT BY CONSUL-GENERAL WALKER, OF PARIS.

Through the public prints my attention has been called to the fact that the police authorities of Paris are, at the present time, prosecuting a thorough and effective crusade against dealers in articles of food deleterious to health. I have noticed among the articles scheduled as dangerous comestibles and liable to seizure certain American hams,

which came under this classification by reason of their being packed in yellow sack-cloth impregnated with chlorate of lead, a method of curing which, while it may serve to preserve the meat from exterior deteriorating influences, is considered by the health authorities as very dangerous.

The trade at Paris in American bacon, hams, preserved meats, vegetables, and fruits has already attained considerable proportions, and has still a large, unoccupied, and promising field for future development; and it behooves our exporters to guard with sedulous care against attempts to place bad wares in a good market. The sanitary police system at Paris and throughout France is so thorough and effective that any enterprise of this character must be fruitless and suicidal.

I therefore most respectfully suggest that the Department take measures to have these facts brought to public notice in the United States.

GEORGE WALKER,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Paris, France, August 30, 1880.

THE BRANDY AND WINE TRADE OF COGNAC

REPORT BY CONSULAR AGENT SMITH.

[Transmitted to the Department of State through the consulate at La Rochelle.]

In compliance with your wishes, I make a report of the state of commerce in the district of Cognac for the year ending September 30, 1880, being guided therein by the questions proposed in your letter.

1.—THE BRANDY TRADE.

Production.—You inquire whether the production and sale have increased or diminished.

It has certainly diminished both in production and sale; for, although the brandy legalized at this consular agency for the United States during the year ending September 30, 1880, amounted to 5,626,073 francs against 4,551,248 francs during the preceding year, this apparent increase in favor of 1879-'80 is owing to the increase in the price of brandy during the past year, and not to any real increase either in production or sale.

The proof that brandy has diminished in production is found in the fact that no quotation of the 1879 brandy is made, and none of any consequence was distilled.

The principal houses of Cognac, such as the Hennessys, &c., select their stock from well-known vineyards in the four great brandy divisions of the brandy region, known as the Grand Champagne, the Little Champagne, the Fine Wood, and the Borderies, and with these they prepare their well-known brands. Now, should one of these elements be wanting, the vintage of that year would not be quoted by them, as was the case with 1879, because the Grand Champagne and the Little Champagne failed. Hence, the merchants of first rank sold no brandy of 1879 vintage, but drew from that of 1878 and previous vintages at higher prices, as the older brandy grows the dearer it becomes.

Again, a second proof of the diminution of production is found in the price of the wine from which brandy is made. For as soon as the price of the wine rises to a value that makes it more profitable to the grower

to sell it for home consumption than to distil it, of course it is sold. Now, this is what happened in 1879. The wine was at 30 francs the barrel in former years, and it was profitable to distil it; but last year the price rose above 60 francs, and the grower had no interest to distil it. On the contrary, he realized more profit in selling it for table use.

To determine whether or not it is profitable to distil wine, the price at which it sells should be multiplied by four, which will give the price at which the brandy made from it must be sold to avoid loss. Thus, for example, when white wine stands, as to-day, at 60 francs the barrel, by applying the proportion thus given the brandy would have to be sold at 240 francs the hectoliter. Add 10 francs for the distiller's trouble, and the price current would be, at least, 250 francs the hectoliter. It will be easy, therefore, to tell whether any will be offered this year by the price at which it is quoted.

Quality.—You inquire next what the quality of the brandy was compared with that of previous seasons.

As none was quoted, for the reasons just explained, it is not easy to make any comparison. The year, however, was a very poor one, and the quality of the vintage would compare very unfavorably with that of former seasons.

Adulteration.—You ask also whether adulteration has increased, and how it is effected.

The principal houses, I do not believe, are guilty of it, but it exists elsewhere on a large scale, as proved by the official report for the year, and is effected by mixing the lees of wine with German and other spirits.

While the undeniable and unrivalled qualities of French brandy, says the official report, preclude the fear of the trade suffering from foreign competition, the question is whether, in view of the great demand its excellence has created and of the future scanty supply, it will retain its former reputation. Danger, says the report, seems to lie in the increased temptation to supplement deficiency by an inferior article, in the great profit derived from adulteration, and in the inferences that may be drawn from the large and increasing quantities of grain and other spirit which find their way into the district, both by sea and land.

Beet-root spirit from the north of France has advanced in price, and now fetches about 74 francs the hectoliter at a strength of 90°. Grain spirit, which is imported to a considerable extent from Berlin, is clear and tasteless, and the price is 105 francs the hectoliter at 95° of strength. It is also stated in the report that 817 tuns of spirit entered the port of La Rochelle last year, and that fresh arrivals continue on an increasing scale. Thus, it is established that the scarcity of brandy and the increase in price has caused the introduction on a large scale of these foreign elements of adulteration, to which may be added beet-root spirit, which may prevent the prices from advancing further.

That adulteration exists and is practiced in the main is proved by the prices at which brandy is sold. Now, it is well known that the vintage of 1878, which is the last one quoted, as explained above, is held at a price that makes it impossible to offer it at less without adulteration. Hence, it will be easy to determine from the price asked by the well-established houses what the inferior articles offered are composed of. And even these houses are often imposed upon, I think, in making their selections from the country vineyards, for the value of genuine brandy has so far increased, and the temptation of the cunning peasant to palm off a spurious article on the merchants is so great, that the latter, in despite of all their vigilance and long experience, are often unwittingly the victims.

In general the quality of the brandy ordered from the United States is, I am assured, of a better class than that required for other foreign countries.

This remarkable transformation in the brandy trade, occasioned by the ravages of the phylloxera, will tend to increase the care with which our people should act in selecting the houses which deal in the article. Old brandy is becoming an article of luxury, like old Medoc wine, and is, according to the official report, getting more and more difficult to procure, and the value cannot be judged from the tabular statement which follows, drawn from the report and giving the price of brandy at Cognac in francs per hectoliter in 1875, 1878, and 1879, the vintage of 1879 not quoted:

Prices of brandy at Cognac per hectoliter.

Quality of 59°.	Price in December, 1875.	Price in December, 1878.		Price in December, 1879.	
	Vintage of 1875.	Vintage of 1877.	Vintage of 1878.	Vintage of 1877.	Vintage of 1878.
	<i>Francs.</i>	<i>Francs.</i>	<i>Francs.</i>	<i>Francs.</i>	<i>Francs.</i>
Fine champagne.....	110 to 115	185 to 190	175 to 180	260 to 265	250 to 255
Petite champagne.....	90 to 95	160 to 165	150 to 155	235 to 240	220 to 225
Fine wood.....	85 to 90	150 to 155	140 to 145	225 to 230	210 to 215
Very fine wood.....	80 to 85	140 to 145	130 to 135	215 to 220	200 to 205
Ordinary wood.....	75 to 80	135 to 140	125 to 130	205 to 210	200 to 205
Wood & Terroir.....	65	.....	115 to 120	.....	200 to 220

The present stock in the hands of merchants and proprietors of the two Charentes is estimated at from 700,000 to 800,000 hectoliters of good brandy of various growths and ages, at 60° average strength.

Although the supply of vintages prior to 1879, stored in the country and in the cellars of the rich merchants here, is very large, and will supply the demand for several years to come, still it seems probable, in view of the increase in price, that the demand for it from abroad will continue gradually to decline in proportion as the price increases; and the latter will continue to rise as long as no more brandy is distilled. Nevertheless brandy, even of 1879 and 1880, will continue to be offered and sold, but the price of it will indicate what it is.

THE WINE CROP.

You next inquire what will be the probable result of this year's gathering. It will be from twice to three times as much as last year, according to the estimates made of the vintage just gathered in, but as last year was a very poor one, the yield of the present year will be equivalent to the quarter of an ordinary year, and will not suffice for the table. No wine is exported from this district to the United States. It is heavy, and I believe will not bear a sea voyage.

EFFECTS OF THE PHYLLOXERA.

The effect upon the agricultural class of this region has been most marked. Whole townships, where the vine was exclusively cultivated, are laid waste and families reduced to poverty. This destitution, however, arises from the peculiar habits of the peasant and not so much from the loss of the vineyards, for the peasant, in general, is laborious and frugal. But during the prosperous years, and when the vine seemed to promise its fruit *in eternum*, with hardly any culture whatever, the

farmer not only invested his savings in buying the adjoining fields at exorbitant prices, but, not content to move according to his means, he generally mortgaged the land purchased, as well as his own, in order to buy more, relying on future harvests to pay the simple interest. Had the disease not interfered with their calculations, it would have been sound; but, "like a clap of thunder in a clear sky," the phylloxera, hardly visible to the naked eye, has changed all. Those who cannot pay the interest on their fields—and the greater part are found, unfortunately, in the number—have their lands seized and sold by justice for a song, as they yield hardly any benefit for other products. The official statistics quote the difference in the actual price of land, and that before the appearance of the phylloxera, at two thirds, but add that, even at that price there are few transactions. The grower who has been ruined by the events has to commence anew, with hardly any prospect of success.

You inquire, in conclusion, whether the phylloxera has increased its field of destruction. It has not increased this year, but the havoc made in the grand champagne district is very great. The phylloxera attacks the vines in a chalky soil, and those of this choice region have nearly all fallen victims to the scourge, while the vines in a thick soil resist the insect and thrive. The vineyards of the low country, as it is called, between Cognac and Martha, are in a very good condition this year, and will yield abundantly.

THOMAS P. SMITH,
Consular Agent.

UNITED STATES CONSULAR AGENCY,
Cognac, October 16, 1880.

LAW RELATING TO SHIPS ENTERING FRENCH PORTS.

REPORT BY CONSUL BRIDGLAND, OF HAVRE.

I herewith inclose a copy of a law, with a translation of the same, which I regard as of much importance to American ships coming into this and other ports of France.

Should the Department deem it advisable to have this law placed in the hands of ship-owners and ship-masters, I am sure they would avail themselves of the right to demand of consignees the entering of their ships under the conditions of the law and thereby relieve themselves of brokers' fees, which are simply enormous in French ports. It is fifty centimes, or ten cents, per ton on French tonnage, amounting in many instances to as much as \$250.

J. A. BRIDGLAND, *Consul.*

UNITED STATES CONSULATE,
Havre, June 17, 1880.

DECISION OF FRENCH COURT OF APPEAL.

COURT OF APPEAL, CIVIL CHAMBER.

Sessions of the 23d and 24th of February, 1880—Presidence of First President Mercier.

Ship-broker—Sole consignee of the cargo—Entry and clearance of ship going out in ballast without passengers—Stipulation of salary.

The sole consignee of a cargo of a vessel may perform all operations pertaining to the entry, through the customs, both of the ship and cargo.

The stipulation of a remuneration in favor of a sole consignee cannot take away

from him this power, inasmuch as in the decision attached he is declared to have acted in his quality and *proprio jure*.

In case of the clearance of a vessel in ballast, without passengers, the broker has no cause of complaint of not having been required, because the tariffs allow him no remuneration for the service, and that, consequently, no prejudice has been caused him.

Thus decided by the rejection of the appeals made by Mr. Frangue, ship-broker at Havre, against two decisions of the court of appeals of Rouen, the 9th of April, 1878, and 9th of April, 1879, rendered in favor of Messrs. Langstaff, Ehrenberg & Pollak, of Havre; and by the annulling of a decision of the tribunal of commerce of Havre, dated the 24th of September, 1878, rendered in favor of Mr. Taconet, ship-broker at Havre, and on the appeal of Messrs. Tinel & Co.

Mr. Bouché de Belle, lawyer of the court of appeal, acting for Messrs. Langstaff, Ehrenberg & Pollak, and Tinel & Co. Mr. Gaston Mayer acting for the ship-brokers.

The argument of this affair filled up two sessions of the civil chamber of the court of appeal. The decisions were formed after a searching inquiry, and with unusual solemnity.

THE TRADE AND INDUSTRIES OF LIMOGES.

REPORT BY CONSULAR AGENT JOUHANNAUD.

[Translation.—Transmitted to the Department of State through the consuls at La Rochelle.]

EXPORTS TO THE UNITED STATES.

During the year ending September 30, 1880, the exportations to the United States have sensibly increased as compared with the preceding year. The declared value of such exportations for the first-mentioned period was \$669,448.45, whilst for the year ending September 30, 1879, the amount was \$540,988.37, showing an increase of \$128,460.08. These figures are entirely confined to exportations of porcelain, which is our leading local industry.

THE PORCELAIN INDUSTRY OF LIMOGES.

This industry employs about 15,000 work-people of both sexes, and its activity furnishes nearly all the elements that compose the commercial prosperity of Limoges. Thanks to the great number of orders from America and other foreign countries, the wages of the work-people employed in this industry are relatively high for a provincial town. Decorative artists on porcelain receive from 5 to 6 francs per day, and the wages of other hands engaged in the potteries range from about 2.50 to 3.50 francs per day, a day's labor being twelve hours. It may be well said that this industry is one of the first sources of the prosperity of this district, the hand labor of which alone represents two-thirds of the value of the productions, for which reason a great portion of the capital is always in circulation at Limoges and its neighborhood. In the adjoining department of Cher the porcelain trade is followed to some extent, but the potteries there are generally isolated and depend almost entirely upon Limoges for their *personnel*. From the fact that among the Limoges houses each devotes itself to some one specialty, which is not, as a rule, the case elsewhere, their products maintain their reputation for richness and beauty over all competitors, and retain the steady custom of the most extensive and appreciative customers abroad, viz, the Americans. Owing to the fact that nearly all of our potteries have been in the hands of the same families for generations, son succeeding

father in the traditions of the trade, it is my conviction that, while the industry has reached a high degree of excellence in its products, there is still room for improvement, which might be accelerated by a consolidation of the numerous small establishments, and by increased railway communication with the outside world.

A school of design and painting on porcelain has been established for the past ten years, and the results of its operations have been exceedingly gratifying to all concerned in this special branch of the trade, which yearly amounts to about \$3,000,000.

Among other industries of importance at Limoges, I may mention the following:

Liqueurs.—Operations amounting to about \$1,000,000 per annum result from the manufacture and sale of liqueurs having alcohol for their bases. About \$2,000 worth of curaçoa was shipped last year to the United States.

Wine.—This trade is estimated at about \$1,000,000 per annum. The wholesale trade is monopolized by one house, that of M. Eugène Raymond.

Boots and shoes, both in leather and wood, are manufactured here to a considerable extent, the annual commerce therein reaching about \$1,000,000. The fabrication is almost entirely accomplished by hand.

Wrapping-paper is made in this neighborhood to a considerable extent from straw. The market for this production is confined, however, to France.

Gloves, and skins for gloves, are produced in large quantities at St. Junien, about 25 miles distant from Limoges. The gloves have a very high reputation in France, and are but little exported. If, however, these gloves are but seldom exported, such is not the case with the skins used in their manufacture, which are very largely sold throughout the continent in their prepared and colored state. An earnest effort is being made by some of the St. Junien fabricants to extend their sales in the United States with considerable promise of success. A number of workmen from the factories of this place have recently established themselves at New York, and are reported as being greatly pleased with the results of their venture.

CULTURE OF THE VINE.

In the department of the Haute Vienne the culture of grapes is of but little importance. From information derived from the most reliable sources, I am able to state that the result of this year's harvest will be mediocre in the immediately adjoining departments. In the Gironde (Bordeaux) the product is feeble, more feeble in the Charente, and still more unsatisfactory in the district which supplies the best brandy, that is, between Jarnac and Châteauneuf and Barbezieux. Around Périgueux (Dordogne) the gatherings have been accomplished satisfactorily. The grapes in the vineyards not attacked are of good quality. In the northwest of the department, and also in Indre, there is considerable complaint on account of scarcity and lack of maturity.

A. JOUHANNAUD,
Consular Agent.

UNITED STATES CONSULAR AGENCY,
Limoges, France, November, 1880.

THE SILK CROP OF 1880.

REPORT BY CONSUL PEIXOTTO, OF LYONS.

I have the honor to report the following facts respecting the new silk crop of 1880, which you may possibly desire to communicate for the benefit of our appraisers and merchants:

FRANCE.—The crop will be superior in quantity and equal in quality to that of last year. Yellow cocoons command 4.25 to 4.50 francs the kilogram, and green 3 to 3.25 francs.

ITALY.—The *récolte* will be fine in the peninsula. In Piedmont the prospects are not so encouraging, but the outcome as a whole promises favorably.

At Naples yellow cocoons are 4 francs, green at 3 francs the kilogram.

In Tuscany the market is already in activity; heavy sales are reported; at Figline 20,000 kilograms, at 4.25 to 4.50 francs, on Tuesday alone. The plains of the Po offer the green cocoons at 3.50 to 4 francs, but no great quantity has yet appeared.

SPAIN.—For five years the Spanish silk crop has been diminishing, and will this year be less productive than ever. It, however, plays but a comparatively insignificant role, and consequently will not affect prices. Yellow cocoons sell at 4.80 to 5.25, closing prices 4.50 francs.

SYRIA.—The crop is a success.

ASIATIC SILKS.—Latest cablegrams received here yesterday indicate a superior yield to 1879, when the crop was very prolific. Prices of China and Japan raws have consequently fallen very considerably, with a decreasing tendency.

LYONS SILK MARKET.—The favorable outcome of the European and Asiatic silk crops has caused a heavy market, and, in spite of the increasing demand of manufacturers, prices are weak and falling. Cheap silks may be anticipated, and the production of silk piece goods largely increased.

RÉSUMÉ.—As predicted in my previous dispatches, based upon daily consultation and digest of telegraphic reports to the largest operators, the European and Asiatic silk crop will be abundant in quantity, and equal, if not superior, in quality to last year. I predict the total yield of the world for 1880 at 19,000,000 pounds.

BENJ. F. PEIXOTTO, *Consul*.

UNITED STATES CONSULATE,
Lyons, June 10, 1880.

EXPORT TRADE OF LYONS WITH THE UNITED STATES.

REPORT BY CONSUL PEIXOTTO.

The declared exports from this consular district to the United States for the month of August, closed last evening, were 7,730,350.90 francs—\$1,491,957.55.

For the corresponding month of 1879 the exports were 5,362,345.05 francs, showing an increase for this year of 2,368,005.85 francs.

The total exports from this consular district to the United States for the first eight months of 1880, 1879, and 1878 were as follows:

	France.
1880	46,020,854. 15
1879	32,248,681. 85
1878	28,339,787. 90
Increase over 1879	13,772,173. 00
Increase over 1878	17,681,063. 00

Notwithstanding the apparent large increase in exports, manufacturers and shippers continue to complain of the unsatisfactory condition of business, the reduction in prices, and the unfavorable state of the American market, especially for plain silks and goods of fine and rich quality.

The raw-silk market has rarely, if ever, been lower than during the past month, but sales have been limited, and it is only now that manufacturers show a tendency towards buying.

It is asserted that never has Lyons suffered so much from her English business, reported to be worse than in the experience of the oldest houses.

BENJ. F. PEIXOTTO, *Consul.*

UNITED STATES CONSULATE,
Lyons, France, September 1, 1880.

AMERICAN MANUFACTURES IN FRANCE

REPORT BY CONSUL PEIXOTTO, OF LYONS.

GREAT MARKET FOR AMERICAN MANUFACTURES IN FRANCE.

The adoption of a treaty of commerce between the United States and France, which I have earnestly urged ever since occupying my present post, securing a mutual reduction of customs duties, would offer to American manufacturers in almost every line of production a highly lucrative market.

France is far behind in hundreds of articles which by reason of our improved machinery we now produce not only cheaper, but every way superior to any similar articles manufactured in this country. I deem it of the highest importance to enumerate some of the principal articles which under a rational tariff would find ready and profitable sale in France.

Those productions which, even under the existing exorbitant French tariff, now find their way indirectly into the country, would be doubled, and some of them in a short time quadrupled, in import.

To specify:

Cotton goods.—The best yarns in the world are the American, and therefore best adapted to admixture with silk, for which there is a trade to-day of at least \$25,000,000, and of which the United States furnishes next to nothing. Our yarns, once admitted, would not only compete with those of England, Alsace, and those produced in the country, but speedily take precedence and command a monopoly.

Petroleum.—France is still lit by candle-light outside of its important towns and great cities, and even in these candles enter enormously into consumption. The existing high tariff abolished or modified would open up to American petroleum and its products another fruitful source of trade, and, hand in hand, all the rare, admirable, and manifold systems of American lamps would find a splendid market.

Hardware.—French hardware is largely forged. It is clumsy, awkward, and heavy, and recalls the earliest essays of Vulcan. Our light, durable, and elegant manufactures would sweep the market like wild-fire. Axes, hatchets, hammers, and tools generally, which we make so much better, would defy competition and be universally in demand.

Stoves.—With perhaps Italy, no country is so miserably provided with heating and cooking apparatus as France. Twenty years have wrought great atmospheric changes here as elsewhere, the winters are longer and colder, but the houses remain as poorly constructed for comfort as when France was called the "Sunny land," a title the United States can dispute with her to-day, and win the gage by at least from 10° to 15° Fahr. Cooking, parlor, hall, office, and every other description of stove, which we surpass the world in producing, would, if admitted (they are now prohibited), find in France an enormous sale. We need but a treaty, and to have this ware properly introduced, to make the fortunes of our stove manufacturers, and at the same time confer an inestimable blessing upon the people of our sister republic.

Brass.—Sheet and tube; superior qualities of these manufactures, including lamps, burners, &c.

Furniture.—Our machine-made and cheap furniture and endless variety of convenient articles for homestead purposes would find ready sale.

Agricultural implements, &c.—Plows, spades, rakes, hoes, pitchforks, shovels, and hand tools generally are wretchedly made in France. Our American manufactures of these and kindred articles are superior in lightness, strength, and durability, and would be seized upon with avidity, if they could be directly introduced. Agricultural and horticultural machines and tools of every sort would have a rich market. These manufactures, as all other manufactures of wood, iron, and steel, are prohibited under the existing tariff, and such as are introduced are brought through England and other countries and bear the marks of those countries, and add nothing to the honor of the United States, and are curtailed of the legitimate profit and increased sale they would enjoy if imported directly from our stores.

Cutlery.—American cutlery, if properly introduced, would find France as remunerative a customer as other European countries have proved during the past five years.

Boots and Shoes.—Massachusetts and Connecticut have but faint conceptions of the trade they could secure for their great and enterprising manufactures of boots and shoes in France once the prohibitive tariff is removed.

Miscellaneous.—Among other articles for which I believe there is a successful market may be mentioned plated ware, horseshoes (machine-made), nails and spikes, mineral paints, Lake Superior copper and Western lead, framed lumber, carriages, pumps, hydraulic rams; writing paper and envelopes of fine qualities, now very dear in France, and a hundred other articles known to the American stationery line; mill machinery, machinist and blacksmith's tools, such as shapers, drills, bolt and nut cutters, wrenches, stocks and dies, vises, &c., and cotton, wool, and silk machinery. Under the present French tariff it is next to impossible to introduce many of these and hundreds of others of our small and large manufactures. In fact, all manufactures of iron, steel, wool, leather, &c., from the United States are prohibited.

TARIFF REFORM.

I would again most respectfully call the attention of the Department, which has already done so much to extend and enrich our manufacturing

and commercial interests, to the great importance of urging upon Congress a revision of our present tariff, and in the framing of a new system for revenue to provide for two tariffs, one applicable to nations who may execute with the United States commercial treaties, and the other discriminating against those countries who may refuse to negotiate such and continue their present system of proscription.

The immense advantages already enjoyed and the improvements which are constantly being made in American machinery have placed the United States among the foremost manufacturing and producing nations of the earth. A few years more and we shall have nothing to fear from foreign competition in any branch of human science and industry. Our exports exceed our imports, and will continue to bring gold and prosperity to our people, to extinguish our national debt, to increase the value of property, to reduce taxation, and to cause renewed tides of emigration to flow to our shores. It is at this time—and ere we are too far advanced; ere yet our still slumbering powers in other directions are awakened and called into activity, and with these new cultures and new industries the slow and measured tread of our merchant marine shall develop into vast fleets, sailing under our own flag, and sweeping the seas in their rivalry of the world, commerce bearing our own and bringing the products of other lands, ere yet trade jealousies and economical sensibilities of rival nations already suspicious shall deepen into hostility and fresh proscription—it is now that the United States must consider and adopt a broad and catholic system of tariff and commercial treaties, based upon principles of equity, and framed with the wisdom and sagacity of sound and comprehensive statesmanship.

BENJ. F. PEIXOTTO,
Consul.

UNITED STATES CONSULATE,
Lyons, October 1, 1880.

THE SILK INDUSTRY OF THE UNITED STATES—ITS GREAT FUTURE.

AN EXTRACT FROM THE ANNUAL REPORT, FOR 1880, OF CONSUL PEIXOTTO, OF LYONS.

The United States is no less interested in this serious question. We are now annually producing upwards of \$30,000,000 worth of silk fabrics, and yet not one single silk filature worthy of the name exists in all our broad domains. Besides we are wholly dependent upon Europe and Asia for our raw material.

Two questions present themselves at this juncture; the first is, can we raise silk? the second, can we reel it when we have raised it? The first has already been solved; we can raise the silk-worm because we can grow the mulberry-leaf which is its essential food. This question has been conclusively determined. Silk-worms have been successfully raised in the United States for more than thirty years. The second remains to be solved. This impossibility hitherto of competing with the cheap labor of Europe, where the silk reeler receives but 30 cents a day, and of China and Japan, where but from 6 to 10 cents is paid, has been the principal, in fact the only cause why we have not and could not reel the silk from the cocoon. Every silk manufacturer will admit the desirability, nay, for permanent success, the absolute necessity of having his raw material at hand, even as the cotton manufacturer has his.

To be absolved from the necessity of importing from Europe and Asia the raw material would be, next to constituting the silk industry with us, one of the great sources of our national wealth. It would give employment to hundreds of thousands of hands, women and children, now idle or non-producing; it would at the same time afford the masses an elegant and durable material at one-third less than the present cost; and it would give to capital a new and lucrative source of investment, shared at present but by a few individuals, and restricted to exceedingly limited proportions.

But how can we overcome the competition of Europe and Asia with regard to labor? I am happy to be able to answer this question here and now.

In the month of June last, recommended by the Department of State, which under the present administration has done so much to encourage our home manufactures and develop our foreign trade, and provided with letters by the Commissioner of Agriculture, there came to Europe a young American engineer, who, before leaving home, had already given much time and study to the subject, and who since has devoted several months to visiting and carefully inspecting the principal filatures of France and Italy. This gentleman, Mr. Edward W. Serrell, jr., of New York, believed it possible to invent machinery which, by the use and application of *electricity*, would not only overcome existing difficulties, produce a superior quality of thread, but solve at the same time the all-important labor question, and render silk-reeling in the United States as possible and profitable as anywhere else in the world.

It affords me very great satisfaction to say that in my judgment Mr. Serrell has at length been successful, and that very shortly this fact will be abundantly and incontestably proven, both for the now unhappy and rapidly-declining silk-reeling industry of Europe, as well as for, from an American point of view, still more important and valuable interest, the successful planting of silk industry in the United States in all its varied stages and branches, from the mulberry tree, the *magnanerie* or hatching-house, the *reeling mill*, to a still higher perfection than what we have already attained in the fabrication of tissues. What the cotton gin has done for cotton, which with us ninety years ago hardly had a commercial value, the Serrell invention may yet do for silk, and the United States become as pre-eminent for the latter and costlier product as for the former and cheaper culture.

The capital point to be derived from these exhibits is the decline of French filatures, and to note that this decline has proceeded from (1) inferior crops, (2) decreased consumption of pure silk goods, (3) superiority of Italian filatures, (4) competition of Chinese and Japanese labor, and to add that this deplorable state could easily be revived and resuscitated by the introduction of improved and economical machinery.

BENJ. F. PEIXOTTO, *Consul*.

UNITED STATES CONSULATE,
Lyons, October, 1880.

SILK AND WHEAT MARKETS OF EUROPE.

REPORT BY CONSUL PEIXOTTO, OF LYONS.

I beg to present herewith a commercial review of the market of Lyons, France, and of the markets of Europe more or less related to, and as

viewed from, this emporium at the close of the tenth month of the current year, 1880, embracing the subject of silk and wheat.

The revival of business upon foreign markets in general, and the English markets in particular, which was expected to follow the settlement of the Dulcigno question, has not as yet occurred, and the Lyons silk market, which anticipated in consequence important commissions from England, still waits with anxiety the coming of the "good time."

The silk market of Lyons is sensibly affected by this situation. Prices of silks, in spite of every effort of holders to induce purchasers, remain stationary, if not exhibiting lower tendencies, especially for European organzines and China *trames*; as to *grèges*, they are all but neglected.

From official documents it appears that the export of silk piece-goods of Lyons manufacture to England for the nine months ending September 30 amounted to about 108,423,000 francs. For the corresponding period of 1879 the figures were 113,885,000 francs.

It will be seen that political preoccupations, interior not less than exterior, according to my idea, have prevented English importers giving as important orders as during last year.

Certain styles of goods are still sought for and persistently demanded by French and American buyers. Among these are satins in particular, which are made principally from mixed tissues of silk and cotton; the latter material entering at present into a variety of other articles of so-called silk fabrics. It is impossible as yet to determine what specialties will be required for next season, and fabricants are consequently plunged in great embarrassment, it appearing that *façonnées*, which have played so very important a rôle for nearly two years, are no longer in favor.

As to rich stuffs composed entirely of silk, the demand is still extremely feeble. The looms of the city, and those of the surrounding country, are as yet occupied in completing orders for last season, but all will soon be finished, and new commissions will be necessary to keep in activity the workshops and factories.

Business for other stuffs than silk may, in Lyons, be divided into two principal branches—*la draperie* and *la rouennerie*—neither of which for the moment is in great activity. The change in the season is not yet sufficiently accentuated to have a favorable influence upon trade, and stocks left over from last year are adequate for all early demands.

Woolens and other fabrics of wool have a fair demand, and the price of the raw material is well sustained. As to linen goods (in which hemp and flax are specially employed), there is all but a dead sea-calm, and the discouragement is very great.

Several northern factories have been obliged to suspend work, and in others wages have been reduced.

Belgium and England make competition for this class of goods, which it is difficult for French manufacturers to contest.

CEREALS.

The grain market for the past week has been generally very active, and prices have ranged 20 centimes (4 cents) higher per hectoliter for wheat. The price of Rhone wheat at Lyons has been 29 to 30 francs per 100 kilograms; foreign wheat has been difficult of sale, owing to the exaggerated figures asked by holders.

It is easier now to speak of the result of French crops than a month since, and with more precision; and from all the information received

it is quite clear France will require at least 12,000,000 of hectoliters of wheat from foreign countries.

At the principal French ports business has also been active this week.

At *Marseilles* prices have remained strong, with an upward tendency for foreign wheat. The sales for the week are reported at 154,000 quintaux; the imports reached 143,000 quintaux.

At *Bordeaux* prices slightly weakened towards the close of the week. Importations were 11,250 quintaux.

At *Nantes* prices remained firm. Flour has sold readily at the high figures of 38 to 40 francs per 100 kilograms.

At *Havre* transactions were less active, but prices continued firm.

In *England* the deficit of the harvest is considerable, although the yield is larger than last year. It is estimated that 42,000,000 of hectoliters will be required from abroad. In presence of this calculation English markets are rapidly rising, equally for the wheat of the country as for foreign. The arrivals for the week in the different ports of Great Britain have been 463,000 quintaux.

In *Belgium* high prices have predominated for the week. The deficiency of the wheat crop is here estimated at 40,000,000 hectoliters.

In *Holland* the rise has been nearly 20 cents per quintal. The crop has fallen short 2,500,000 hectoliters.

In *Hungary* the wheat has been equally held at advanced prices; the export is feeble at this time, American wheat selling in markets formerly supplied by this country; the surplus upon the actual harvest is estimated at 2,000,000 hectoliters.

In *Germany* the rise in prices of wheat has been rapid for several days, based upon an ascertained deficiency in the crops of 5,000,000 hectoliters.

In *Russia* very little wheat is expected for export; at the highest not more than 5,000,000 hectoliters. The rumor that exportation has been interdicted is denied.

It is calculated here that the United States will be able to ship to Europe 65,000,000 hectoliters (about 178,000,000 bushels).

BENJ. F. PEIXOTTO, *Consul*

UNITED STATES CONSULATE,
Lyons, France, October 28, 1880.

SILK TRADE OF FRANCE.

REPORT BY CONSUL PEIXOTTO, OF LYONS.

The silk commerce of France for the first nine months of 1880 amounted to 170,111,000 francs (\$32,831,423), against 173,219,000 francs (\$33,431,267) for the same period of 1879, a decrease of no very great importance, but very large when compared with 1874, when the exports of silk goods (all sorts, ribbons and trimmings included, as in the above statement) reached 327,498,000 francs or \$63,206,214.

The exports of pure, plain silk goods for the same period were, in 1878, \$19,502,395.24; 1879, \$15,313,026.84; 1880, \$8,633,834.35.

England is the largest importer of French silk goods, the United States comes next, and Germany holds the third rank.

Figured silk goods show a stationary export of from \$1,544,000 to \$1,737,000.

Silk goods mixed with cotton alone exhibit an increase in export, to wit, 1878, \$6,521,352.62; 1879, \$6,199,498.52; 1880, \$8,633,834.40.

Crapes are decreasing and tulles are stationary. Silk trimmings offer but insignificant variations. Ribbons take always a declining movement, and it is hardly to be supposed that the strikes to which the manufacture has recently been subjected are likely to bring up the St. Etienne production.

The decline in the value of the raw material has something to do with this falling off as well as the reduced time of labor, but the essential fact remains, and must be attributed to the decreased consumption. .

The only consoling fact to the Lyonnaise manufacturers is the existence of the same condition of things in other and competing countries, notably Switzerland, and particularly Zurich and Basle, the direct rivals of Lyons and St. Etienne. Both of these large producing centers are feeling the crisis and suffering even more than here.

The German manufacturers of the Rhine, more familiar and happier in the use of mixed tissues, feel less sensibly the effects. The total of all kinds of mixed silk goods for 1880 shows an export of \$1,804,490.94 against \$1,289,819.77 for the corresponding period in 1879.

It results from comparison and consideration of these figures that the tendency continues downward in the consumption of silk fabrics, and ere it takes another direction it is very likely to go lower.

BENJ. F. PEIXOTTO, *Consul.*

UNITED STATES CONSULATE,

Lyons, France, October 25, 1880.

FRENCH IMPORT OF SILK.

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Description.	From										Total.	Total value.
	England.	Switzer-land.	Italy.	Germany.	From the United States.	China.	Turkey.	Spain.	From all other countries.	Kilos.		
SILK AND COCOONS.												
Cocoons.....	Kilos. 12,800	.....	Kilos. 54,600	Kilos. 700	Kilos. 13,800	.....	Kilos. 88,000	.....	Kilos. 485,600	Kilos. 571,900	France 8,486,750
Raw silk, dupions included.....	156,200	.....	318,000	.....	832,100	.....	.....	.....	485,600	1,880,500	84,622,500
Raw silk, thrown.....	28,500	1,400	408,700	700	.....	.....	.....	.....	1,400	440,700	28,204,800
Dyed silk, sewing, embroidery, and others.....	45,800	75,900	863,200	.....	.....	.....	187,000	26,200	1,009,300	7,900	329,500
Bourres and frisons in mass.....	3,500	5,900	38,900	.....	.....	.....	.....	.....	7,800	7,683,000	19,896,200
Bourres, combed and carded.....	53,500	67,400	.....	.....	.....	.....	.....	.....	36,100	1,122,000	3,972,000
Bourres, in thread or fleuret.....	.....	.....	.....	.....	.....	.....	.....	.....	44,600	165,500	.....
Total value.....	303,400	150,600	1,183,400	700	.....	847,900	226,200	26,200	2,034,300	4,780,600	146,633,550
TISSUES OF SILK.												
Tissues of plain pure silk.....	31,271	54,216	.....	.....	.....	.....	.....	.....	38,523	124,010	9,548,770
Tissues, figured.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,977	237,240
Tissues, mixed with gold or silver.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	133	10,200
Tissues, mixed with other materials, plain.....	.....	.....	.....	22,250	.....	.....	.....	.....	14,042	36,292	2,649,316
Tissues, mixed, figured.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	230	20,240
Garzes and crapes, pure silk or mixed.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,831	880,090
Tulle.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,115	336,325
Laces.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11,874	.....
Tissues of waste silk (mixed and pure foulards included).....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19,921	946,685
Hosiery, silk or waste silk.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4,151	361,137
Ribbons, velvet, pure silk.....	.....	.....	.....	298	.....	.....	.....	.....	17	315	34,128
Ribbons, pure silk, and others.....	.....	7,080	.....	490	.....	.....	.....	.....	53	7,623	785,169
Ribbons of mixed silk and other materials.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12,968
Total value.....	31,271	61,296	.....	23,038	.....	.....	.....	.....	52,635	207,586	15,834,082

Imports of silk, silk goods, and cocoons for the first six months of 1880.

Description.	From England.	From Switzer-land.	From Italy.	From Germany.	From the United States.	From China.	From Turkey.	From Spain.	From all other countries.	Total	Total value.
SILK AND COCOONS.											
Cocoons.	Kilos. 18,900	Kilos.	Kilos.	Kilos.	Kilos.	Kilos.	Kilos.	Kilos.	Kilos.	Kilos.	France.
Raw silk, dupions included.	156,200		54,600		15,800	15,800			483,600	571,600	6,486,750
Raw silk, thrown.	28,500	1,400	318,000		882,100	882,100	88,600		483,600	1,860,500	84,032,500
Dyed silks, sewing, embroidery, and others.			400,700	700					1,400	440,700	28,204,800
Bourres and frisons in mass.	45,800	75,800	303,200				137,600	26,200	1,000,300	7,900	19,320,500
Bourres, combed and carded.	3,500	5,900	38,900						1,634,000	1,634,000	19,496,200
Bourres, in thread or fleur.	63,500	67,400							7,800	56,100	1,122,000
Total value.	303,400	150,600	1,181,400	700		817,900	226,200	26,200	44,600	163,500	3,972,000
TISSUES OF SILK.											
Tissues of plain pure silk.	31,271	54,212							38,323	124,010	9,548,770
Tissues, figured.										1,977	237,240
Tissues, mixed with gold or silver.										123	10,200
Tissues, mixed with other materials, plain.				29,200					14,042	36,292	2,646,316
Tissues, mixed, figured.										230	20,240
Gauzes and crapes, pure silk or mixed.									6,831	6,831	260,080
Tulle.									6,115	6,115	358,325
Laces.										11,874	11,874
Tissues of waste silk (mixed and pure foulards included).									10,921	10,921	946,065
Embroidery, silk or waste silk.									4,151	4,151	361,137
Ribbons, velvet, pure silk.				298					17	17	84,128
Ribbons, pure silk, and others.		7,080		490					53	7,633	788,169
Ribbons of mixed silk and other materials.											12,968
Total value.	31,271	61,296		23,038					52,635	297,586	15,834,083

Exports and imports of silk goods and cocoons for nine years from 1871 to 1879, inclusive.

IMPORTS.

Description.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.*
Cocoons, silks, and waste silks.....	France. 159,413,000	France. 164,702,000	France. 94,143,000	France. 207,122,000	France. 139,337,000	France. 131,243,000	France. 157,851,600	France. 189,630,000	France.
Silk or waste silk tissues.....	17,138,000	13,611,000	14,079,000	17,667,000	16,403,000	13,048,000	14,757,000	18,440,000	.....
Total francs.....	176,551,000	180,313,000	108,224,000	224,800,000	155,942,000	146,293,000	172,608,000	199,090,000	.....

EXPORTS.

Cocoons, silks, and waste silk.....	74,849,000	62,502,000	59,155,000	89,427,000	58,069,000	45,945,000	50,791,000	74,798,000	.....
Silk or waste silk tissues.....	188,396,000	132,817,000	129,461,000	158,438,000	212,634,000	183,733,000	281,193,000	241,375,000	.....
Total.....	183,115,000	194,819,000	188,616,000	247,865,000	270,703,000	229,678,000	311,954,000	316,173,000	.....

* No report during the war.

OPPOSITION TO AMERICAN PRODUCTS AT NANTES.

REPORT BY COMMERCIAL AGENT GIFFORD.

Unlike the other great commercial cities of France, notably Paris, Havre, Bordeaux, Lyons, and Marseilles, Nantes and the neighboring departments declare themselves to be so injuriously affected by the competition from the United States that they constantly demand the protection of the government against what they term the ruinous and intolerable invasion of American products. Not only is the feeling of the manufacturing and agricultural classes extremely hostile to the projected treaty of commerce with the United States, which is erroneously attributed to the initiative of our people and regarded as a scheme for increasing their advantage over French producers, but an increase of the duties already imposed by the general tariff is demanded, with a view to the complete exclusion of American merchandise, especially provisions and agricultural produce. This ultra-protectionist spirit, especially in reference to those branches of business in which local capital is largely invested, finds expression in the public journals, in the councils-general of the departments, but more particularly through the chamber of commerce of Nantes. The American salt meats and canned goods which are introduced, for the most part indirectly, upon the local markets, are regarded with special aversion. The chamber of commerce has several times called the attention of the government to the increasing sales of American pork and lard, which can be delivered here at prices so much below those which French producers can afford as to make it probable that they will ultimately take full possession of the market.

The following statement of prices, recently published, indicates the danger to which the local industry is exposed:

	France.
Price of American bacon	104
Price of bacon prepared at Nantes	135
Difference in favor of the United States	31
Price of American lard	99
Price of lard prepared at Nantes	139
Difference in favor of the United States	40

This difference in our favor exists in spite of an increase of the duty in 1874 from 10 cents to 92 cents for each 212 pounds. This barrier having proved insufficient, the pork-packers of Nantes now propose, with the support of the chamber of commerce, that all American pork and lard shall be absolutely excluded, on the ground that they endanger the public health on account of the prevalence of the trichina. No facts are cited in support of this thesis, and careful inquiry does not reveal a single case of disease occurring in this vicinity in consequence of the use of American pork or lard. Yet this mischievous impression is spread abroad officially, and the government is exhorted to follow the example of Italy, Portugal, and Greece in excluding an important article of consumption under a pretense which, however sincerely put forward, is but slenderly supported by facts.

The opposition to the introduction of American pork is only cited as perhaps the most striking example of the prevailing hostility to the importation of the productions of the United States. This opposition

extends even to the grain, which during the last two years, while diminishing the profits of the proprietors of large estates, has saved the common people from an incalculable amount of suffering. The considerable quantities of American produce sold here and its effect on the market show that the efforts of interested parties to create a prejudice against it in the minds of consumers is only partially successful. The attraction of cheap food, which *seems* good and wholesome, is too strong to be resisted even in the face of official warnings. At the same time there is not the least doubt that a much greater quantity of American provisions and agricultural produce could be sold in the west of France but for the pains taken to represent them as dangerous or at least of inferior quality.*

GEORGE GIFFORD,
Commercial Agent.

UNITED STATES COMMERCIAL AGENCY,
Nantes, October 31, 1880.

TOBACCO MONOPLY AND MANUFACTURE IN FRANCE.

REPORT BY MR. GEORGE H. SCIDMORE, CONSULAR CLERK AT PARIS, ON THE HISTORY AND ADMINISTRATIVE ORGANIZATION OF THE STATE TOBACCO MONOPOLY IN FRANCE.

INTRODUCTORY.

Conformably to the instructions of the Department, requiring periodical reports from the United States consular clerks upon matters of commercial interest, I have the honor to submit herewith the result of my inquiries for the past year into the history, organization, and operations of the French tobacco monopoly.

In the preparation of this report I have been greatly assisted by the courtesy and friendly interest of General Lucius Fairchild, late United States consul-general at Paris, and of his successor, Mr. George Walker.

The following publications have been consulted for data, viz: "Enquête Parlementaire sur l'Exploitation du Monopole des Tabacs et des Poudres"; "Compete en Matières et en Deniers de l'Exploitation du Monopole des Tabacs"; "Louis, Ordonnances, Décrets, Décisions, et Arrêtés Ministériels rendus depuis le 29 Decembre, 1810, époque de l'Établissement du Regime"; "Exclusive de la Fabrication et de la Vente des Tabacs, jusqu'au 31 Mai, 1879"; "Bulletin de Statistique et de Législation Comparée"; "Tableau du Commerce de la France"; "Paris, ses Organes, ses Fonctions, et sa Vie, par Maxime du Camp"; and pamphlets issued by the association of French manufacturers and merchants for the encouragement of Franco-American treaty of commerce. I have also carefully read and preserved everything appearing in the columns of the press that I thought could serve my purpose, and I have thoroughly inspected one of the largest government tobacco factories at Paris.

HISTORY OF THE ORGANIZATION OF THE MONOPOLY.

It is related that at a grand ball given at the palace of the Tuileries in the early part of the winter of 1810 the First Napoleon noticed among his guests a lady very richly attired and burdened with an unusual

*A further illustration of this opposition to the introduction of American meats "on the ground of their being dangerous to the public health," will be found in the October, 1880, number of these reports, page 105, from Consul-General Walker, of Paris.

amount of diamonds and other rare jewels. The Emperor immediately inquired as to the name of this lady, who from appearances, he said, must have great wealth in order to support such splendor. He was informed that she was simply Madame Robillard, the wife of a tobacco manufacturer. Being a financier, as well as an ambitious leader of armies, the incident soon bore its fruit. A searching investigation into the operations and profits of the tobacco trade resulted in two imperial decrees, dated December 29, 1810, and January 12, 1811. By these decrees it was ordained that (in view of the necessity of a more equitable and productive system of revenue, and to protect and encourage the interests of French agriculturists) for the future, the purchase of tobacco in leaves, and the fabrication and sale, whether wholesale or retail, of manufactures of tobacco, should be exclusively confined to the administration of indirect taxes (*Régie des Droits Unis*) in all the departments of the empire. This administration (*régie*) was prohibited from buying or fabricating any other than tobacco grown within the empire, excepting one-fifteenth part, which might be obtained from abroad. The minister of finances was directed to notify, each year, the several prefects of the number of hectares in their respective departments that might be cultivated in tobacco. The mode of application by intending cultivators, and the distribution of permits to cultivate, were minutely provided for. The prices that the *régie* would pay for the coming crop of tobacco was to be fixed and announced by the 1st of January of each year. At the end of each season the crop was to be divided into three categories (each having its predetermined price), viz, good, medium, bad. A commission in each department, composed of the sub-prefect and two experts, were to inspect the leaves presented and allot to them their grades. Under severe penalties all persons were prohibited from having in their possession or from importing foreign manufactured tobacco, or, not being authorized cultivators, from having in their possession tobacco in leaves. Provision was also made for the inventory, appraisal, and purchase of stock and material in the hands of the former manufacturers. For the sale of the products of the *régie* there were established in each department a general entrepôt in each arrondissement, a special entrepôt, and in each arrondissement or commune a retail bureau (*bureau de débit*) proportioned to the population.

On the 9th of May, 1811, the Emperor issued the first decree fixing the prices at which the *régie* would sell tobacco for the ensuing year. The tobacco was divided into five classes, to be sold to consumers at from 3 to 14 francs per kilogram.

In order to insure a successful issue for the undertaking, the state took into its service the former manufacturers and their employes, who were placed under the supervision of the excise agents. From the nature of things, it was utterly impossible to speedily introduce all needed reforms in the *personnel*, in the quality of articles delivered to the public, and in the profitable management of the business. But, before many months after its completed organization, the result showed that, as a fiscal experiment, the *régie* was a success, and the permanence of the monopoly in the hands of the state was conceded on all sides.

By subsequent decrees, *ordonnances*, and laws the monopoly has been prolonged from time to time, usually at intervals of ten years. The last action of the government in this respect was embodied in the law of December 21, 1872, which continues the powers of the *régie* until January 1, 1883.

In the year 1831 the *régie* was placed under the immediate control of the ministry of finances, and a thorough reorganization was effected. A

corps of scientific superior agents was selected, and regulations for its recruitment from among the graduates of the polytechnic school were issued. Before being confided with appointment in the grade of "*ingénieurs aux tabacs*" these graduates had to undergo a subsequent rigid course of two years' study and practice in the laboratories and manufactories, after which a career of promotion opened to them, depending entirely upon their ability and merit for its extent, for the tenure of its benefits, followed by pension in old age.

By means of this excellent civil service system, still in operation, the state has obtained not only capable, conscientious, and ambitious servants, but the products of its factories have steadily improved in quality, and to it, without doubt, a large proportion of the financial success must be attributed.

The *régie* has in operation, at present, sixteen large manufactories, twenty-seven *magasins de culture*, and four *magasins de transit*. It employs over 19,000 work-people, of whom about 80 per cent. are women and girls. The hours of labor are ten, daily. Nearly all of the employés are paid by the piece—only about 4 per cent. of them receiving fixed salaries. The tariff of remuneration by the piece varies with the location—the highest rates being paid at Paris. The usual daily earnings are, for men, from 62 cents to 94 cents; for women, from 28 cents to 56 cents. The fixed daily salaries average, for men, from 72 cents to 97 cents; for women, from 49 cents to 56 cents. For faithful or exemplary services the work-people receive annually rewards (*gratifications*) varying in amount from 20 to 500 francs. About \$3,000 is thus expended each year. The *régie* exercises a paternal care for all of its employés, each of whom is taxed a small percentage on his or her earnings, which is held on deposit to provide for old age. Libraries, medical attendance, schools for the children, and nurseries for infants are provided. Promotions are accorded for merit and after competitive examinations. Supervision of all work is strict and conscientious, so that there is no chance for shirking or slighting.

Having thus briefly glanced at its history and organization, I proceed to a description of the manner in which the *régie* operates at present.

The tobacco in its raw state is obtained from the licensed planters in France and by importation.

TOBACCO CULTURE IN FRANCE.

At the beginning of each year the minister of finances designates the number of hectares upon which, and the departments within which, the culture of tobacco may be undertaken during the following season. The last ministerial decree upon this subject confines the privilege to the departments of Alpes Maritimes, Bouches du Rhône, Dordogne, Gironde, Ile-et-Vilaine, Landes, Lot, Lot-et-Garonne, Meurthe-Moselle, Nord, Pas de Calais, Puy de Dôme, Hautes Pyrénées, Haute Saône, Savoie, Haute Savoie, and Var.

In the month of October, or November, according to the regions, upon certain set days, an agent of the *régie* proceeds to the communes among which the prefects have apportioned the allotments, and receives the declaration of every proprietor desiring to profit by the authorization.

A commission composed of the prefect, or one of his delegates, as president, of the director of indirect taxes, of a superior agent of culture, of a member of the council general, and of a member of the council of the *arrondissement*, not being planters, examine the declarations, and admit, reduce, or reject them.

After a planter is accorded permission to cultivate, he is subjected to close official supervision and to numerous stringent regulations concerning such details as the prohibition to sow any other seed than that furnished him by the administration, the obligation to destroy the seed-beds within a stated time after gathering the crop, the mode of planting, the distance between plants, and the manner in which he is to cultivate, weed, prune, bud, &c.

In addition to the surveillance as to these matters, two official inventories are taken of the growing crop—the first to ascertain the superficies of land under cultivation and the number of plants, the second to determine the number of leaves for which the planter will be held accountable.

When the tobacco has been gathered, in a manner prescribed by regulations of minute detail, the planter takes it to the *magasin* of the *régie*, where it is subjected to the inspection of a commission of five disinterested experts, named by the prefect, who separate the leaves into three portions, according to quality. The planter is then paid for each portion in accordance with a tariff of prices promulgated by the minister of finances.

In Algiers the *régie* has three *magasins* at which planters may dispose of their tobacco. The cultivation in this colony is comparatively free from the restrictions that surround it in France.

Foreign tobacco is obtained, through contract with private parties, after published proposals by the minister of finances, through the French consular corps abroad, and through a special government agency, located for the purpose at Havana.

At present a little over one-third of the tobacco purchased by the *régie* is of French growth; over one-half consists in foreign leaves, mostly obtained from the United States, and the remainder is made up by importations of cigars from Havana and Manila, and by cigarettes and miscellaneous products from various countries, and by custom-house seizures.

The statistics which immediately concern American interests in the tobacco trade in France will be found further on, under the heads of "Imports" and "Exports."

THE TOBACCO IN THE MAGAZINES OF THE RÉGIE.

These magazines, distributed throughout the republic, are of two sorts—*magasins de transit* for foreign tobacco, and *magasins de culture* for indigenous tobacco. In the *magasins de transit* the foreign leaves have not to submit to any other manipulation than the sampling of packages, after which they are forwarded to the factories in such quantities as may be demanded.

With the indigenous tobacco the course is different. This tobacco, when received at the "*magasins de culture*" from the hands of the French farmer, is usually very imperfectly dried, and has to be immediately subjected to curing processes to rectify this fault and improve the taste and aroma. After a thrashing and culling of the bundles they are put in heaps, according to maturity, and fermented in a temperature as high as 30° to 40° centigrade. This "maturation" lasts from six to nine months, depending upon the locality and the condition of the leaves as received, and is interrupted from time to time by the operation of shaking and turning, in order to prevent too great fermentation. When this fermentation is concluded, those leaves containing less than 20 per cent. of water are ready to be packed. At this point certain of the leaves undergo a stemming (*écabochage*). The leaves are then packed,

by hydraulic pressure in bales and hogsheads, weighing from 400 to 500 kilograms each. In this packed state they remain stored in the magazine for some months longer to acquire further ripeness. It is usually from fifteen to eighteen months after their gathering that the leaves are considered to be in a fit condition to be sent to the manufactory.

THE TOBACCO IN THE MANUFACTORIES.

Upon their arrival at the manufactories the packages are sorted and opened, and the leaves undergo a thorough stemming process—that is, such of them as have not already been so treated at the *magasin*. The leaves are then spread out in large bins and receive the preparatory wetting, with water containing 10 per cent. of marine salt, in order to produce flexibility and to prevent powdering. This process occupies twenty-four hours. Then follows the sorting, according to quality, and the distribution to the various work-rooms for “composition.”

SNUFF MANUFACTURE.

Upon reaching this department the leaves are put into machines and chopped into strips of the width of a finger. They are then moistened with pure water, or, in certain circumstances, with tobacco juice of varying strength, the necessary quantity and quality of which is determined by chemical analysis. These strips are then piled up in masses containing from 35,000 to 40,000 kilograms, in rooms where a high and even temperature is maintained by steam-pipes and ventilators. Here they remain to ferment during a month or six weeks, at the end of which time they are dried, ground into powder, and sifted. This powder then receives a wetting, is packed in stout wooden bins in quantities ranging from 25,000 to 30,000 kilograms, and so remains to ferment for several months. During the course of this final fermentation the powder is tested and moved from one bin to another, from time to time, to insure a successful issue of the process. When the samples taken from the bins indicate maturity, the now perfected snuff is packed in barrels and casks and is ready for the market.

The improvements and advantages consequent upon the introduction of labor-saving machinery and more scientific supervision in the foregoing processes have resulted in the reduction of the time necessary to turn out the marketable article from three years, in 1835, to twelve and fourteen months at the date of my writing.

The total production of snuff annually amounts to nearly 15,000,000 pounds, *avoirdupois*, which is sold to consumers at the rate of \$1.09 per pound. The *régie* also sells a comparatively small quantity of foreign manufactured snuff at the rate of \$1.40 per pound.

MANUFACTURE OF CHEWING TOBACCO.

The *régie* manufactures chewing tobacco in one form only, which is known under the names of *rôles ordinaires*, *rôles menu filés*, and *carottes*. The second of these is almost exclusively sold as chewing tobacco (*tabac à mâcher*, or *tabac à chiquer*), while the other two are sold for both chewing and smoking.

The *rôles ordinaires* are made of 40 per cent. of Virginia and Kentucky leaves and 60 per cent. of indigenous leaves. Their manner of fabrication is very simple. After the preliminary moistening of the unstemmed leaves, they are twisted by machinery into a long rope-like shape, of the diameter of about one-half inch, and are coiled into round bundles of varying weight. If the *rôles* are for chewing they are then steeped in concentrated juice of tobacco and are subjected to compressor

The *rôles menu filés* were formerly composed exclusively of Virginia tobacco, but in 1863 the *régie* began to use French tobacco, in consequence of the interruption of supplies from the United States. The change succeeded so well that now the American article is no longer employed for this purpose. These *rôles*, as their name indicates, are made into slender cords. They are also steeped in concentrated tobacco juice. The use of molasses and licorice is no longer followed. After the steeping there follows hydraulic compression and desiccation in a current of hot air. The *rôles* are then delivered for consumption in balls weighing one hectogram each, and very much resembling tarred yarn.

The *carottes* are produced in about the same manner as the *rôles ordinaires*, and are mostly consumed in Brittany. Their principal merit consists in the difficulty with which they burn. This quality is imparted by enormous hydraulic pressure.

This meager category of chewing tobacco is easily explained by the fact that the French are not extensive purchasers of the article, and, never having been permitted to any extent to taste a better foreign product, are content with what they have. Nevertheless, the habit of chewing is rapidly on the increase in France. In 1861 the sale of *rôles* amounted to 736,267 pounds, and in 1873 to 2,088,750 pounds.

MANUFACTURE OF SMOKING TOBACCO.

After the stemming process the leaves intended for smoking receive their first moistening, which lasts twenty-four hours. They are then neatly arranged with their edges parallel, and are taken to the chopping machines, which resemble guillotines fed by hoppers. The tobacco drops out from under the knife in stringy masses, in appearance like our American fine-cut. The machines in use by the *régie* are capable of chopping 220 pounds per hour, the knives being renewed twice during that time. The tobacco, on leaving the choppers, contains about 25 per cent. of humidity, and is immediately conveyed into one end of a revolving drying cylinder, heated to a uniform temperature of 95° centigrade (203° Fahrenheit), from the opposite end of which it issues after fifteen minutes in a dry state, and freed from albumen. It is then put through a second cylinder, similar in construction to the last mentioned, but which subjects the tobacco to a strong draught of cold air, to eliminate all dust and heat. The tobacco is then massed in well-aired bins, where it remains from four to six weeks, after which it is carefully overhauled by hand to remove the pieces of stems and foreign matter that may have escaped notice in the previous operations. It is then put up in packages, varying in weight from 40 grams upward. These packages are surrounded with a paper band, upon which are printed the government tax stamp, the date of manufacture, the weight, the price, and the letter "H 10" followed by figures. This last mark signifies the amount of humidity contained in the tobacco at the time it was put into the packet. Thus "H 10" indicates 10 per cent. of humidity. The prices vary from \$1.09 to \$2.19 per pound. Smoking tobacco known as *scaferlati de troupe* and as *scaferlati à prix réduits* is sold to the army and navy and to hospitals at prices ranging from 13 cents to 70 cents per pound.

Nothing resembling the beautiful flake tobacco, so generally known and appreciated in the United States, is produced by the *régie*.

CIGAR MANUFACTURE.

Of the fabrication of cigars in the manufactories of the *régie* there is but little to be said. The methods of manipulation, seasoning, and packing present scarcely any features that are in strong contrast with those pursued in large manufactories in the United States.

For cigars sold at prices below ten centimes the *régie* uses 44 per cent. of indigenous leaves. The fillings of cigars sold at ten centimes each are exclusively composed of Mexican and Brazilian tobacco. A portion of them is covered with the best of indigenous leaves. In the composition of cigars of a better quality, Maryland, Virginia, and Kentucky leaves are mostly employed. The factory at Reuilly, near Paris, produces a considerable quantity of superior cigars from Havana tobacco. Notwithstanding the utmost care employed in this fabrication, the *régie* has been compelled to acknowledge that with the same material the Havana manufacturers still produce a better cigar. Climatic differences are assigned as the explanation. To overcome this disadvantage the *régie* has been for years, and is still, occupied in investigations and experiments, which have not, as yet, resulted in complete satisfaction.

MANUFACTURE OF CIGARETTES.

In the year 1843 the *régie* began the fabrication of cigarettes. The consumption then amounted to only about 9,900 pounds, while to-day it is between 800,000 and 900,000 pounds. Three classes of cigarettes are manufactured by hand and by machinery, viz, *cigarettes en caporal ordinaire*, *cigarettes en caporal supérieur*, and *cigarettes du Levant*, or Turkish cigarettes. They average 1,000 to the kilogram, and are generally sold in packages of twenty each. The prices range from \$1.31 to \$13.13 per pound. Fifty-two varieties are produced.

SALE OF TOBACCO.

The sale of the products of the *régie* to the public is confined to specially authorized agents appointed by the minister of finances, the director-general of indirect taxes, and the prefects of departments. These agents are known under the title of *débitants de tabac*. Their places of business are called *débîts de tabac*. Appointments to these positions are made only on the ground of a reward for services to the state by the concessionary, or by her husband, or by his or her father or mother, as the case may be. The position being one of great profit, there are always an enormous number of applicants. At present there are over 40,000 *débîts de tabac* distributed throughout France. The *débitants* are permitted to engage in other business in connection with the sale of tobacco, and may farm out their concessions. The latter practice is generally pursued by those "who have seen better days," and whose pride restrains them from personally engaging in trade.

The *débitants* buy their supplies from the *régie* at a fixed scale of prices. In their sales to the public they are obliged to adhere to another scale equally definite. The *débitants'* profit on such sales amounts to a fraction less than 10 per cent.

THE QUALITY OF THE PRODUCTS OF THE RÉGIE.

Under this head there is abundant opportunity for both favorable and adverse criticism. Inasmuch as an expression of opinion in a matter of taste entirely depends upon individual predilections, I have deemed it wise in this instance, as throughout this report, to simply state such facts as have come to my notice.

The cigars sold by the *régie* appear to be well received, and complaints are rare. The cheaper kinds of cigars are, of course, poor in quality, but in consequence of the prices at which they are sold, their universal uniformity in composition, and their freedom from adulteration, they seem to compare favorably with, and, in a number of instances, excel, cigars of a similar price sold in the United States. As for Havana cigars,

which are both imported and manufactured by the *régie*, I have been unable to perceive any good reasons for complaint. Every brand of these cigars that is demanded by the public, to any paying extent, is promptly put upon the market, and it is next to impossible for private parties to improve upon the careful selection, packing, and modes of shipment followed by the *régie*. These views come to me from persons who have tried the experiment of special importations.

Cigarettes.—The enormous annual increase in this product of the *régie* of itself appears to be conclusive evidence of its favor with the public. The cigarettes are well made, unadulterated, and their uniformity of quality may be relied upon in each brand. The quality of paper used for covers, however, has been the occasion of many complaints. The administration itself has recognized this defect, and is endeavoring to remedy it.

Snuff.—The French public, so far as I have observed, is perfectly satisfied with the supplies of this article furnished by the *régie*. Careful study in the manufactories has resulted in producing exactly what purchasers require. Caprices in taste are as fully catered to as could be done by private manufacturers. Purity and pungency are the great characteristics of this article.

Smoking tobacco.—In the processes employed in the production of this article I believe that there is much room for improvement, speaking from the point of view of a foreigner not yet thoroughly habituated to the monotonous uniformity of the *scaferlati* and *caporal* of the *régie*. Too much of the aroma and strength of the tobacco seem to be exhausted during the drying processes in the cylindrical furnaces. In smoking the best French tobacco it is impossible to enjoy the delicious taste and perfume that Americans find in their better brands of "Durham," "Lone Jack," "Golden Leaf," &c. However, the customers of the *régie* appear to be contented, the revenues of the government from this source are continually increasing, and inasmuch as administrative reforms are but slowly accomplished, and experiments looking to the creation of more extended markets are looked upon with suspicion, the prospect of improvement in the near future is not promising.

Chewing tobacco.—A great deal that has been said in the preceding paragraph may be, with justice, repeated under this caption. French chewing tobacco, to an American taste, is raw, rank, and unsatisfactory, and is only worthy of comparison with the "twist" and "negro heel" that solace our "field hands" in the South. In France the habit of chewing is confined to the lower laboring classes, to soldiers, and sailors. To some extent, however, it has permeated into higher levels of society, and the demands upon the *régie* are steadily increasing.

To resume, it must be said that the most salient characteristic of the productions of the French Government tobacco monopoly is *purity*. In no matter what part of France or her colonies one may purchase packages bearing the *timbre* of the *régie*, there is no probability of receiving other than a product of pure tobacco. It is always *tobacco* that one receives from the *régie*. It may be good; it may be indifferent; or it may be bad; but never, so far as my inquiries have reached, is it other than *unadulterated tobacco*. As to its quality, the consumer must decide for himself.

I have endeavored to the utmost to ascertain the grounds upon which are based the accusations of adulteration which are put forward against the *régie*, and I am forced to admit that, as a rule, they emanate from interested parties and are unworthy of credence. It is true that to a considerable extent tobacco sold in the "*débîts*" is mixed with foreign

substances, but I am convinced that the adulteration is confined to smoking tobacco and snuff sold "*en détail*"—that is to say, sold in small quantities unaccompanied with the envelope or "*timbre*" of the *régie*.

There is a large number of poor people in Paris and other large cities of France who gain a miserable pittance in gathering rejected cigar-stumps and refuse tobacco in the cafés and public thoroughfares. Popular tradition has it that these gatherings find their way into the manufactories of the *régie*, and, later on, appear in the market in the disguise of cigars, smoking tobacco, and snuff. Such is not the case. Refuse tobacco gathered in this manner is almost entirely bought up by nurserymen, florists, and farmers, who use it as an insecticide or compost. It may be possible that in some instances the "*débitants de tabac*" make use of it to adulterate their wares, but such cases are rare, and the punishment, in case of detection, is very severe.

The capital of the monopoly on the 31st of December, 1873, was thus stated :

Tobacco, manufactured and unmanufactured.....	\$14,514,832 00
Real estate.....	5,907,305 80
Machinery and tools.....	1,111,779 20
Furniture.....	22,496 60
Other property.....	272,690 43
Total.....	21,829,104 03

The total capital at the same date in 1872 was \$20,754,435.10. The actual profits for the year 1873 were \$47,623,348.80, or nearly 230 per cent. on the capital.

The following table shows, by years, the net receipts and net expenses of the monopoly since the date of its foundation to the close of 1878:

RECEIPTS AND EXPENSES FOR SIXTY-EIGHT YEARS.

Table showing the net receipts and net expenses of the French Government tobacco monopoly from July 1, 1811, to December 31, 1878.

Years.	Receipts.	Expenses.	Years.	Receipts.	Expenses.
July 1, 1811, to December 31, 1814.	\$50,574,077	\$38,681,096	1847.....	\$23,539,987	\$6,980,479
1815.....	10,774,571	2,685,203	1848.....	23,251,583	6,265,010
1816.....	11,060,212	4,871,684	1849.....	23,426,621	5,698,540
1817.....	12,450,235	6,046,909	1850.....	24,422,758	5,297,745
1818.....	13,149,974	5,106,077	1851.....	25,319,814	6,298,596
1819.....	12,809,067	4,652,931	1852.....	26,247,867	6,750,866
1820.....	12,834,362	5,037,107	1853.....	27,858,111	5,579,807
1821.....	12,988,296	4,590,574	1854.....	29,140,561	9,054,976
1822.....	13,007,610	4,803,725	1855.....	30,639,483	10,749,265
1823.....	12,799,610	4,773,515	1856.....	32,843,662	7,653,774
1824.....	13,212,813	4,085,108	1857.....	34,851,342	9,425,367
1825.....	13,406,513	4,461,362	1858.....	35,614,901	11,845,386
1826.....	13,407,602	4,818,773	1859.....	35,949,600	13,126,420
1827.....	13,348,060	4,700,331	1860.....	39,065,095	11,641,404
1828.....	13,508,335	5,110,220	1861.....	43,220,922	9,635,947
1829.....	13,321,094	4,628,652	1862.....	44,243,541	10,927,312
1830.....	13,458,139	4,509,777	1863.....	45,427,430	11,336,720
1831.....	13,218,950	4,467,930	1864.....	46,847,389	12,498,185
1832.....	13,497,636	4,498,436	1865.....	47,442,483	12,326,028
1833.....	13,929,761	4,294,247	1866.....	48,558,350	12,417,336
1834.....	14,529,635	4,368,576	1867.....	49,746,469	12,155,376
1835.....	14,826,744	4,400,705	1868.....	49,717,396	11,644,855
1836.....	15,056,796	4,191,782	1869.....	51,141,475	10,649,898
1837.....	16,294,629	4,354,038	1870.....	48,851,652	9,925,587
1838.....	17,090,526	4,433,906	1871.....	43,643,140	9,772,829
1839.....	18,114,611	5,119,369	1872.....	53,926,714	10,021,916
1840.....	19,037,646	6,191,494	1873.....	58,395,368	11,846,688
1841.....	19,589,671	6,361,406	1874.....	59,970,801	12,539,331
1842.....	20,143,047	5,895,000	1875.....	62,710,708	11,561,647
1843.....	20,873,549	6,511,405	1876.....	64,724,807	13,526,485
1844.....	21,487,205	6,052,498	1877.....	66,139,002	12,333,434
1845.....	22,379,984	6,419,362	1878.....	66,759,080	12,179,971
1846.....	23,211,557	7,477,146	Net totals.....	1,903,841,333	522,862,705
			Net total gain...	1,380,978,630	.....

The net receipts for the year 1879 are stated at \$67,368,717. I am not able to give the amount of the expenses for that year, the audited report thereof not being at hand at the time of my writing.

It should be observed that the differences between the receipts and expenses shown in the above table do not fully represent the profits of the monopoly, for there is to be added the necessary increase in the value of capital.

The report of the administration, published in 1878, gives the following details, brought down to the end of 1873:

Year 1873:	
Net receipts.....	\$58,395,368 20
Net expenses.....	11,846,688 40
Net gain.....	46,548,679 80
Increase in value of capital.....	1,074,669 00
Actual gain.....	47,623,348 80
Amount turned into treasury.....	46,510,520 40
From July 1, 1811, to December 31, 1873:	
Net receipts.....	1,583,535,876 40
Net expenses.....	460,721,836 40
Net gain.....	1,122,814,040 00
Increase apparent in value of capital.....	\$36,784,780 80
Decrease apparent in value of capital.....	14,955,676 80
Increase, actual in value of capital.....	21,829,104 00
Gain discovered in revision of accounts.....	533,523 20
Actual gain.....	1,145,176,667 20
Amount turned into treasury.....	1,144,903,214 60

In no instance since its inauguration has there been a year without enormous profits to the monopoly. During the past sixty-eight years there have been only eighteen years wherein a decrease in the value of the capital has been experienced, of which the most noticeable were 1815, when the decrease was \$1,664,508, and 1870, when the decrease was \$5,069,005.

Notwithstanding the terrible effect upon commerce, and the loss of factories, magazines, and planters in Alsace-Lorraine, incident to the Franco-Prussian war, it will be seen, by reference to report above, for the three years 1870, 1871, and 1872, that the receipts exceeded the expenses by \$116,701,174.

TOBACCO EXPORTS AND IMPORTS.

The definitive official statistics of the commerce of France, for 1879, not having yet been published, I have taken the figures for 1877 and 1878, under the head of tobacco and its manufactures, to illustrate what is about the present volume of the trade.

EXPORTS.

Year.	Categories.	Value.	Mostly to—
1877.....	Leaves.....	\$1,665,983 80	England, Belgium, and Algiers.
	Cigars.....	376,067 20	England, Germany, and Algiers.
	Cigarettes.....	62,922 40	Germany, England, and Switzerland.
	Other manufactures.....	819,344 00	England, Algiers, and Switzerland.
	Total.....	2,924,317 40	
1878.....	Leaves.....	1,384,189 80	England and Switzerland.
	Cigars.....	379,837 60	England and Germany.
	Cigarettes.....	80,402 40	Italy and Belgium.
	Other manufactures.....	792,446 00	England, Germany, and Algiers.
	Total.....	2,636,875 80	

IMPORTS.

Year.	Categories.	Value.	Mostly from—
1877	Leaves	\$8,058,986 60	United States, Turkey, Germany, and Algiers. Switzerland, Cuba, and Germany. Algiers and Cuba. Belgium, Holland, Switzerland, and Germany.
	Cigars	1,314,769 60	
	Cigarettes	21,042 00	
	Other manufactures	516,390 00	
	Total	9,911,197 20	
1878	Leaves	6,272,668 80	United States, Turkey, Germany, and Algiers. Cuba, Switzerland, and Germany. Switzerland and Algiers. Belgium, Holland, and Germany.
	Cigars	1,307,214 80	
	Cigarettes	46,210 00	
	Other manufactures	406,068 00	
	Total	8,122,191 60	

COMPARISON OF EXPORTS AND IMPORTS.

Year.	Exports.	Imports.	Difference.
1877	\$2,924,317 40	\$9,911,197 20	\$6,986,879 80
1878	2,636,875 80	8,122,191 60	5,485,315 80
Decrease	287,441 60	1,789,005 60	

TOBACCO TRADE BETWEEN FRANCE AND THE UNITED STATES.

The publications of the French customs service show that, during the year 1877, there were exported to the United States 40,618 pounds of snuff and other manufactures of tobacco. For the year 1878, the figures under the same heading are stated at 42,173 pounds. The values are not given. From the returns of the United States consular officers it appears that the declared value of such exports from France to the United States were, for—

Year ending September 30, 1877	\$629
Year ending September 30, 1878	2,071

The imports into France from the United States, almost entirely consisting of leaf tobacco, amounted in value, during the year 1877, to \$3,639,104. During the year 1878 the value of such imports was \$3,486,961.20.

TARIFF AND CUSTOMS REGULATIONS AFFECTING TOBACCO.

Tobacco, in leaves or stems, is prohibited entry into France when imported for the account of private parties. This prohibition extends even to the dust and *débris* of the leaves. Manufactures of tobacco may be imported for the account of private parties under special authorization of the administration. This authorization, however, is limited to ten kilograms (22 pounds) per annum to any one person. The tariff upon importations of this character is as follows:

Cigars and cigarettes, 36 francs per kilogram, net (equal to \$3.15 per pound).

Snuff and chewing tobacco, 15 francs per kilogram, net (equal to \$1.31 per pound).

Turkish smoking tobacco, 25 francs per kilogram, net (equal to \$2.10 per pound).

All other smoking tobacco, 15 francs per kilogram, net (equal to \$1.31 per pound).

These duties were promulgated in the law of June 13, 1880.

The following table gives a comparative view of the import duties on tobacco of the principal European nations :

Import duties on tobacco levied by the principal European nations, in francs, per kilogram.

Tobacco.	France.	England.	Germany.	Belgium.	Holland.	Italy.
Leaf tobacco.....	Francs. (*)	Francs. 8.27 to 9.65	Francs. 1.06	Francs. 0.132	Francs. 0.0148	Francs. (†)
Cigars	36.00	13.99	3.37	2.58	0.848	30.00
Cigarettes	30.00		3.37			
Snuff	15.00	10.34 to 12.41			0.2544	
Chewing tobacco.....	15.00	11.03 to 12.41			0.2544	
Smoking tobacco.....	15.00 to 25.00				0.2544	
Other manufactures of.....		11.03 to 12.41	2.25	0.42	0.2544	20.00

Tobacco.	Russia.	Spain. §	Portugal.	Turkey. ||	Sweden.	Norway.	Denmark.	Greece.
Leaf tobacco.....	Francs. 1.07	Francs. 8.12	Francs. 8.12	Francs. 9.95	Francs. 0.03	Francs. 0.29	Francs. 1.17	Francs. 1.17
Cigars	21.49		12.50	4.24	1.84	1.87	0.78	0.78
Cigarettes	21.49			4.24	1.12	0.46	1.17	1.17
Snuff	6.44 to 8.00			1.63	1.12	0.46	2.34	2.34
Chewing tobacco.....	6.44		6.25	1.14	0.93	0.46		
Smoking tobacco.....	6.44			1.47	1.12	0.46	1.17	1.17
Other manufactures of.....			5.00			0.46	0.55	0.55

* Prohibited, except for the régie.

† Prohibited.

‡ For Havana cigars only.

§ Nearly all prohibited, except importations for the régie.

|| Eight per centum ad valorem.

Consumption of tobacco per head of population per annum. (Year 1873.)

	Pounds.
Belgium	5½
Holland	4½
Germany.....	3½
Austria	2½
Norway	2½
Denmark	2½
Hungary	2
Russia	1½
France	1½
England	1½
Italy	1½
Spain	1½
Sweden	½

At Paris the consumption per head was 3½ pounds, valued at \$4.07.

The present government revenue derived from tobacco per head of population per annum, in the following countries, is estimated as follows :

France.....	\$1 71
Austria	1 31
Germany	1 30
England	1 18
Italy	94
Hungary.....	79

In concluding this report, I feel it a duty to state what are my convictions as to the prospects and opportunities of enlarging the trade in tobacco between the United States and France.

The *régie*, as may be seen from what precedes, greatly depends upon the United States for its supplies of leaf tobacco. Our position in this respect is unique and free from apprehension. France cannot do without her supplies of the raw material from our country.

Mr. Sylvestre, *courtier assermenté à Paris*, a gentleman who has had much experience in the tobacco trade, was examined by the Parliamentary Committee of Inquiry, and testified as follows:

Our conviction is that indigenous tobacco can never replace, as to quality, development of leaves, aroma, &c., the tobacco of the United States.

Mr. Sylvestre's testimony is confirmed by the *régie* itself in the use it makes of our raw tobacco.

If we sell to the *régie* such superior leaves, the question must naturally arise, why can we not also sell to it some of our manufactures of these leaves?

The superiority of many of the products of our factories over those of the *régie* is incontestable, and a fair opportunity in the French market is all that is necessary to establish a profitable and always growing trade.

At the present moment there is a large and influential party in France devoting its energies in behalf of a Franco-American treaty of commerce. In the event of negotiations resulting therefrom, it should not be forgotten, on our part, that tobacco occupies the fifth place in importance among the importations of France from the United States.

GEO. H. SCIDMORE,
Consular Clerk.

UNITED STATES CONSULATE GENERAL,
Paris, October 1, 1880.

IMPORTS AT ROUEN FROM THE UNITED STATES.

REPORT BY CONSUL RHODES.

The salt meats imported from the United States to Rouen for the year ending June 30, 1880, do not exceed 40,000 pounds, which, however, is an increase over the importation of the preceding year. There is little consumption of salt beef, the public taste being in favor of fresh meat, or some form of sausage, which comes under the general name of *charcuterie*. The very poor, if unable to purchase this or fresh meat, prefer the cheese of the country to salt beef. The salt pork importations, however, are notably increasing, and the same may be said of lard. The canned meats are steadily growing in favor, and are well adapted to the French repast, often serving as a *hors-d'œuvre*.

The French Trans-Atlantic Steamship Company, last winter, established a depot in the market for the sale of American fresh meat at lower rates than the native article. Generally the imported meat was good, but occasionally inferior, and this restricted the sales. Besides, the supply was irregular, and thus a regular custom was not organized. It is the intention of the company to renew the experiments the coming winter, it is said, under more favorable conditions.

The best and most profitable way of supplying the people of Normandy with fresh meat will be to bring over the animal on the hoof, and, after the fatigue of the sea voyage, fatten it on the rich pastures for which this part of the country is celebrated.

The duty on foreign cattle is insignificant, being only 3½ francs per
20 C R.

head—seventy cents. The introduction of American cattle into Normandy is an enterprise that would doubtless be attended with handsome profits.

During the year ending June 30, 1880, 3,367,925 pounds of American cotton were brought to Rouen. As this is the center of the cotton industry, an effort has been made to create a market here in order to have the cotton conveyed directly to the factory without the intervention of the middle men at Havre and Liverpool, but so far this effort has not been attended with success, as may be inferred from the quantity imported. For the same period, 3,484,016 kilograms of crude petroleum and 1,485,805 of refined were brought to this place from the United States, and the demand is steadily increasing. It is not allowed to be brought up to the city quays, but is discharged five or six miles below Rouen at a small port called Dieppedale. This is done to avoid the risk of fire and offensive odor.

The quantity of American wheat imported at Rouen for the year ending June 30, 1880, was 8,328,470 bushels (227,140,116 kilograms), and of Indian corn was 2,254,328 bushels (57,382,909 kilograms). This great increase in the wheat importation is naturally owing, in a great measure, to the insufficiency of the home crops during the last three years. The present year the wheat crop has been fair in the north of France, which is the chief wheat district of the country, and the deficit will be light compared with that of the preceding one; but close commercial relations have been established between the United States and France through the large importations of these latter years, and a strong effort will be made to maintain them. There is an impression among a number of men engaged in commerce in this neighborhood that the Americans will be able to discharge their wheat on the docks at Rouen and sell it at what may be considered ruinous rates for the French agriculturist. It remains to be seen whether this result will be attained. In case it should, the French farmers would be obliged to change their wheat for some other crop.

The Indian corn is not subject to the conditions which attach to the wheat importation, and the demand for it is rapidly increasing, being used for distilling brandy and alcohol, and the manufacture of starch and sugar. It is also, to a limited degree, fed to horses in some parts of France, but so far is not used as a human aliment. The French are large consumers of bread, which is exceedingly good and wholesome, and it will be difficult to replace it in part, as in the United States, with corn bread.

The land being divided up mostly into small farms worked by hand, there is not a great demand for agricultural machinery. That which is used from the United States comes through Great Britain on account of less duty, and is generally purchased on inspection at Paris. Still, if American machinery were placed on exhibition at Rouen, and were accompanied with circulars printed in French, it would doubtless stimulate the sale.

During the year ending June 30, 1880, ten American vessels arrived in this port, which is a less number than the preceding year. For the same period there were 261 vessels of other nationalities which came from the United States, with a tonnage of 319,231, which is nearly one-half of the entire tonnage of this port—701,257. Thus, the share of American vessels in the carrying trade of the United States and Rouen is shown to be insignificant.

The wheat from the United States for the same period, at Dunkirk, was 2,996,851 bushels (81,732,300 kilograms), the Indian corn 2,120,788

bushels (53,974,600 kilograms), and the petroleum 3,051,523 kilograms. There were also light importations of lumber, salt pork, and fish oil. The exportations from Dunkirk to the United States were insignificant. For a dozen years past the number of American vessels at Dunkirk has been about the same. During the year ending June 30, 1880, there were 18, with a total tonnage of 15,179. It is reasonable to suppose that the number will be somewhat increased in the future, owing to the ameliorations now being effected in the port, which will admit vessels drawing 20 feet.

The importations at Calais from the United States for the year ending June 30, 1880, consist of a small lot of timber and a large quantity of wheat, amounting to 3,866,966 bushels, and the exportations from the same place to the United States consist of lace, cement, woolens, and linen goods, the principal in value being lace. Improvements are also being made in Calais as a seaport.

The total importation of American wheat at the ports of Dunkirk, Calais, and Rouen, for the year ending June 30, 1880, was 14,473,011 bushels, and of Indian corn 4,375,116 bushels, which represented in value from \$25,000,000 to \$30,000,000.

ALBERT RHODES, *Consul*.

UNITED STATES CONSULATE,
Rouen, France, September 23, 1880.

TREATY OF COMMERCE BETWEEN FRANCE AND THE UNITED STATES.

REPORT BY COMMERCIAL AGENT HERTZBERG, OF ST. ETIENNE, TRANSMITTING MEMORIAL OF THE CHAMBER OF COMMERCE OF THAT PLACE TO THE SECRETARIES OF AGRICULTURE, OF COMMERCE, AND OF FOREIGN AFFAIRS, REGARDING A TREATY OF COMMERCE WITH THE UNITED STATES.

I have the honor to transmit the inclosed "*communiqué*," of the "Republican of the Loire and the Haute Loire," containing a memorial of the Chamber of Commerce of St. Etienne, addressed to the French secretaries of agriculture, of commerce, and of foreign affairs, regarding a treaty of commerce with the United States, which may be of interest to the Department.

As to the statistical figures given in this "official" document, I beg to remark that the same appear to be rather inaccurate. It is true that in 1878 the value of the St. Etienne ribbon exportations had gone down to the sum of 1,359,146.30 francs, but in the following year the exportation of these articles amounted to 2,662,594.23 francs, and for the first five months of the present year the records of this office show an exportation the value of which amounts to 1,684,098.20 francs.

THEODORE HERTZBERG,
Commercial Agent.

ST. ETIENNE, June 3, 1880.

[Translation.]

MEMORIAL.

The Chamber of Commerce of St. Etienne has already had the honor to call your attention to the fact that a treaty of commerce with the United States would prove to be highly important and conducive to the interests of our home industry, the ribbon manufacture of St. Etienne.

It is more than eight years since a tariff of customs—amounting to almost prohibition—has closed up the American market against most of the products of European

industries. This fact has become one of the chief causes for the sad stagnation of trade existing in the commercial circles of this continent.

As to the specialty of the St. Etienne ribbon-manufacturing branch, the value of its exportations to the United States reached in 1873 the figure of about 30,000,000 francs, embracing nearly the third part of its entire production. From that time this figure has been from year to year constantly decreasing, until it has finally come down to a single million, thereby showing an exportation next to none. Now it seems to us that our own country does import a volume of American products sufficiently large to justify on our part an earnest effort of making that country—a country of a so pre-eminently consuming capacity—take in reciprocity a corresponding part of our industrial production.

Thanks to the labors of our Franco-American commission, the United States themselves have taken the first steps in this matter, which in our judgment should be considered as paramount to all others. In April, 1879, the American House of Representatives and Senate voted a resolution by which the President was requested to take into consideration the expediency of entering into negotiations with the French Government for the purpose of studying and preparing a treaty of commerce between the two countries.

We are not aware of the motives that may have prevented the French Government from taking advantage of these approaches so emphatically friendly.

New efforts in the same direction have since been made by the French-American commission, that body submitting to both branches of the American Congress a new joint proposition praying for the nomination of three commissioners. This resolution, left on the 5th of February, 1880, to the consideration of the Committee on Foreign Relations, has been, on the 24th of February, indefinitely postponed. As we learn from an official communication of the committee, a discussion of the matter will be taken up as soon as the "French Government may have made known its intentions to Mr. Evarts, the Secretary of State, who will immediately send the information to the Senate."

To sum up: It appears to us that the initiatory steps taken privately in the matter by the Franco-American commission have obtained all that reasonably could be expected. Moreover, it is an undeniable fact that the Government of the United States will leave the question untouched until the French Government shall have taken the same into its hands; and in the opinion of this chamber our government cannot forbear any longer from taking due official notice of this important matter without seriously endangering the interests of this country.

The objection which might perchance be raised "that, previously to any steps on the side of our government, the new general tariff of customs ought to be voted," should not retard action. There is in reality not the least obstacle in the way of the French Government to prevent the same from accepting without even a day's delay the proposition offered in the joint resolution of the Senate at Washington, inviting France to nominate an "official" Franco-American commission. The nomination of such a body does not enjoin any responsibility whatever; it simply would express the desire of having the condition of things duly considered and fairly examined into by competent judges.

Convinced, as we are, Mr. Secretary, that you will without delay take into your hands our cause, or rather the cause of French commerce, we beg to give you the assurance of our highest respect.

EUROPEAN FINANCES.

REPORT BY CONSUL-GENERAL LEE, OF FRANKFORT-ON-THE-MAIN, GERMANY.

The Daily Zeitung, of this city, which is one of the best commercial and financial papers in Germany, has recently published a collation of statistics concerning the public expenditures and debt of the empire, and of the other great states of Europe, which has become the subject of wide comment, and which, it has occurred to me, may be of much interest to the Department.

These statistics are given in the form of a series of short tables, the sums being reduced for the sake of convenience to round millions of marks, and excluding all items of a contingent or hypothetical nature, concerning the amount or verity of which there could be any serious difference of opinion.

The first of these tables compares the public expenses of the various

German States during the years 1865 and 1879, and is as follows, the amounts being reduced to equivalents in United States gold:

German States.	1865.	1879.
Prussia	\$74,351,200 00	
Hannover	8,068,200 00	
Kurbessen	3,879,400 00	
Schleswig-Holstein	3,332,000 00	
Nassau	2,023,000 00	
Frankfort	1,142,400 00	
Total for Prussia	92,796,200 00	\$106,862,200 00
Bavaria	19,068,800 00	30,892,400 00
Saxony	8,211,000 00	17,731,000 00
Wurtemberg	7,330,400 00	12,780,600 00
Baden	6,521,200 00	8,282,400 00
Hesse	1,951,600 00	4,069,800 00
Remaining States, about	15,731,800 00	25,870,600 00
Empire		108,409,000 00
● Total Germany	151,606,000 00	314,398,000 00

From this it appears that the ordinary public expenses of the empire were in 1879 more than double what they were in 1865.

I forbear to reproduce here the political comments of the press on this fact, but there seems to be propriety, as there is also much cause for gratification, in comparing the showing thus made with the course of public expenditure in our own country during the same period.

According to the most authentic information I have, the ordinary expenses of the United States Government during the year 1865 were in round numbers, including interest on the public debt, \$1,294,000,000. During that year, however, we expended over \$1,000,000,000 for current and accrued war expenses, while Germany was at peace. Our actual ordinary expenses for that year were therefore not greatly if at all in excess of \$300,000,000, while in 1878, the latest year for which I have an authentic statement, they had declined (including interest on the public debt) to \$237,000,000. The course of public expenditure in the United States has therefore been, notwithstanding our immense pension, bounty, and other war charges, and the rapid development of our country, directly the reverse of that in Germany.

It will be seen furthermore that the entire actual cost of our government administration during the year 1878, including interest, was about \$77,000,000 less than that of the German Empire in 1879. The disproportion of expenses in the two countries during the latter year was probably still greater.

The next table exhibits the aggregate budgets of all the European states for the same years. It is as follows, the amounts being reduced, as before, to their equivalents in United States gold currency:

European states.	1865.	1879.
Germany	\$151,606,000	\$314,398,000
Austria-Hungary	247,758,000	291,550,000
France	449,820,000	567,832,000
Great Britain	321,300,000	406,980,000
Russia	245,616,000	511,700,000
Italy	172,788,000	268,940,000
Spain	124,050,000	143,276,000
Netherlands	35,224,000	48,552,000
Belgium	32,368,000	51,646,000
Denmark	7,140,000	10,948,000
Sweden	9,696,000	21,420,000
Norway	5,236,000	13,328,000
Portugal	21,420,000	33,320,000
Greece	4,198,000	10,234,000
Turkey, Europe	59,024,000	61,880,000
Turkey, Asia	5,474,000	24,990,000
Switzerland	3,570,000	8,092,000
Total	1,898,288,000	2,788,646,000

This statement shows that, without exception, every European state has increased its expenditures since the year 1865. The total cost of government for all Europe has risen since that year from \$1,898,000,000 to \$2,788,000,000.

The United States alone, among the great nations of the world, has reduced its expenses during the last fifteen years. The expenses of our government are also proportionately and actually less than the expenses of any other nation of the same compass and importance. For example, in comparison with Germany, \$77,000,000 less; with Austria-Hungary, \$54,000,000 less; with France, \$330,000,000 less; with Great Britain, \$170,000,000 less; with Russia, \$274,000,000 less; and with Italy, \$31,000,000 less.

The third table presents a succinct statement of the existing national debts of the various European countries, and is as follows:

European states.	1865.	1879.
Germany	\$610,470,000	\$1,047,200,000
Austria-Hungary	1,473,220,000	2,005,150,000
France	2,040,000,000	3,227,000,000
Great Britain	3,848,400,000	3,704,470,000
Russia	990,000,000	2,830,000,000
Italy	571,000,000	1,044,400,000
Spain	990,000,000	2,400,000,000
Netherlands	414,420,000	800,820,000
Belgium	110,000,000	290,072,000
Denmark	45,220,000	48,700,000
Sweden	21,420,000	57,120,000
Norway	9,044,000	24,900,000
Portugal	190,400,000	302,700,000
Greece	54,510,000	95,200,000
Turkey, Europe	228,400,000	1,100,000,000
Turkey, Asia	952,000	99,000,000
Switzerland	714,000	0,604,000
Total	12,503,330,000	20,585,000,000

This table shows that among all the countries of Europe only England and the Netherlands have reduced their debt since the year 1865, and that even in these exceptional cases the reduction has been trifling. It also shows that the total public debt of Europe has risen from \$12,503,000,000 in 1865 to \$20,585,000,000 in 1879.

On the other hand the public debt of the United States has during the same time steadily and vastly diminished. In 1865 that debt, as then audited and ascertained, amounted to \$2,680,647,069; whereas, on the 1st of December, 1878, it had diminished to \$2,027,414,325, a reduction during thirteen years of over \$653,000,000.

We also learn from the foregoing figures that the debt of the United States is now less than that of France, Great Britain, Russia, or Spain, and very little more than that of Austria-Hungary or Italy.

The fourth table shows the amounts expended for military and naval purposes during the years 1865 and 1879. It is as follows:

European states.	1865.	1879.
Germany	\$47,124,000	\$101,620,000
Austria-Hungary	54,740,000	53,074,000
France	84,728,000	128,620,000
Great Britain	128,520,000	153,510,000
Russia	104,244,000	178,740,000
Italy	54,078,000	44,030,000
Spain	28,500,000	28,500,000
Netherlands	8,806,000	14,042,000
Belgium	6,902,000	9,044,000

European states.	1885.	1870.
Denmark	\$2,142,000	\$4,284,000
Sweden	3,808,000	6,182,000
Norway	1,066,000	2,618,000
Portugal	4,760,000	8,568,000
Greece	1,428,000	2,856,000
Turkey, Europe	22,848,000	23,800,000
Turkey, Asia	2,854,000	9,044,000
Switzerland	1,666,000	2,618,000
Total	559,776,000	786,122,000

According to this statement, every country in Europe has increased its military expenditures, excepting only Italy, Austria-Hungary, and Spain. Beside these gigantic figures the cost of the military and naval armament of the United States seems trifling. It is not uncommon for an American sojourning in Europe to hear slighting remarks concerning the military prowess of his country, but it is quite possible that, in considering the cost of such luxuries abroad, he may have little to regret in their absence at home.

In this connection it may be remarked that there seems to be little prospect, at the present time, of any material reduction in the immense military burdens borne by European countries. Between these countries the present situation is that of an armed truce. In Germany, for example, the tendency is toward an increase, rather than a reduction, of military forces, and a bill having such increase in view is now pending in the Imperial Parliament. This bill is intended to provide for the military establishment for the next seven years, and to take the place of the similar law of 1874, which expires in 1881. The bill, if it becomes a law, will increase the standard peace footing of the army by 27,000 men, or by more than the entire amount of the military force of the United States.

The other great powers are in like state of preparation for impending conflict. All of them demand additional forces, and threaten to lay additional burdens of taxation.

How enviable and how gratifying, in comparison with this, is the situation of our own country! But the simple figures herein presented cannot be strengthened or emphasized by any observations of my own. They may be properly left to tell their own story.

A. E. LEE,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Frankfort-on-the-Main, January 26, 1880.

EXHIBITION AT FRANKFORT-ON-THE-MAIN OF ARTICLES PATENTED OR REGISTERED UNDER THE GERMAN PATENT LAW.

REPORT BY CONSUL-GENERAL LEE, OF FRANKFORT-ON-THE-MAIN.

I have to advise the Department that an exhibition of German patented and registered articles will be held in the city of Frankfort-on-the-Main from May to October, inclusive, in the year 1881, and that all Americans who have taken out patents for their inventions under the German law or who have registered or deposited models of the same

with the Reichsoberhandelsgericht, in Leipsic, are invited to take part in this exhibition. This invitation is extended from the provincial managing committee of the proposed enterprise, and has been communicated to this office with the request that it be made known through the proper channels to all interested parties in the United States.

A provisional form of application for space and other privileges in the exhibit is herewith forwarded in both English and German. This form of application should be filled up and mailed by intending participants to Dr. Dronke, provisional manager of the Universal German Patent Exhibition, before the 1st of February, 1881. Dr. Dronke's post-office address is at Frankfort-on-the-Main.

In setting forth the proposed objects and expected advantages of this exhibition the committee express the opinion that it will greatly assist inventors in the introduction of their inventions to the public, and that it will enable them to profit also by a comparison of their discoveries and improvements with those which others have achieved in similar fields. The foreign inventor, it is said, may learn what sort of improvements can be placed to advantage in Germany, and so acquire useful hints as to the extension of his enterprises in this quarter of the world; manufacturers, on the other hand, and those engaged in other branches of industry, may see what are the latest and best improvements of which they may avail themselves in their business.

It will be observed that only those American inventors who have taken out patents, or who have registered their models, under the German patent law are invited to take part in the exhibition. It will therefore be impossible, unless more liberal terms are extended, that anything like a fair representation of American inventions can be had.

As has already been stated in my annual report for the year 1879, a patent cannot be taken out by an American inventor under the German law after his invention shall have been patented in his own country. This is due to the fact that the law excepts from its benefits any invention which has been previously described in any printed publication. The number of patents taken out by Americans in Germany has therefore been comparatively small, and the display which can be made by our inventors in this proposed exhibition must therefore be comparatively meager.

Still the exhibit may be a useful and suggestive study to Americans as an epitome of German progress and discovery. They may learn therefrom what are considered the latest and best appliances of this country to the various industries, and in what respect Germany offers to American manufacturers and inventors a field of profit and usefulness.

I would, therefore, advise that suitable steps be taken to have the nature, purposes, and privileges of this exhibition properly made known in the United States, and its results, when they shall be accomplished, properly studied. Also that American inventors holding patents, or other privileges, under the German patent law, be duly advised of the invitation extended to them.

ALFRED E. LEE, *Consul.*

UNITED STATES CONSULATE-GENERAL,
Frankfort-on-the-Main, January 17, 1880.

Copy of provisional form of application inclosed in foregoing report.]

(First page.)

PROVISIONAL FORM OF APPLICATION.

General German patent and registered articles exhibition, with which will be combined a series of special exhibitions in various branches of industry, at Frankfort-on-Main, 1881.

Name or firm of exhibitor, _____.

Branch of industry, _____.

Address, _____.

(Second page.)

Object, _____.

Number of German patent, _____.

Description of the registered article: _____

Space required: { a) Covered space: _____
 b) Covered wall space: _____
 b) Uncovered space: _____

Charge for space varies according to circumstances from 10 to 20 marks per square meter; uncovered space at lower rates.

(Address.)

[Stamp.]

GERMANY.

An das _____.

Ausstellungs-Comité für die allgemeine Deutsche Patent- und Musterschutz-Anstellung zu Händen des Herrn Dr. Dronke, Frankfort-on-Main.

[Appendix to the foregoing report.]

PATENT-LAW OF THE GERMAN EMPIRE.

[Presented to Consul-General Lee by F. Wirth, esq., member of the Imperial German Patent Commission and one of the firm of Wirth & Co., patent solicitors, of Frankfort-on-the-Main.]

FIRST SECTION.

PATENT RIGHTS.

§ 1.

Patents are granted for new inventions which admit of industrial use.

Excepted are:

1. Inventions the use of which would be incompatible with the laws or the public morals.
2. Inventions of articles of food (for nourishment or luxuries), of medicines, and of substances produced by chemical process, so far as the invention does not relate to a certain method of producing such articles.

§ 2 (A).

An invention is *not* regarded as *new* if it has already been described in any printed publication, or publicly used in Germany at the time of application for a patent in accordance with this law, in such a manner that its employment appears possible by other persons skilled in the particular trade to which it relates.

§ 3.

Whosoever first applies for a patent of invention according to the provisions of this law is entitled to the grant of the same.

The claim of the petitioner to the grant of a patent is void if the essential contents of his application have without permission been taken from the descriptions, drawings, models, implements, or arrangements of another person, or from a method of manufacture used by the same, and if such person raises opposition on that account.

§ 4 (B).

The patent has the effect that nobody is permitted to manufacture professionally (*gewerbmässig*), to introduce into commerce, or to sell the article to which the invention relates.

If the invention relates to a method of manufacture, to a machine or other mechanical contrivance, to a tool or implement, the patent has moreover the effect to prohibit any one from applying such method or of using the article to which the invention relates without permission of the inventor.

§ 5.

The patent has no effect against a person who, at the time the patentee made his application, had already been using the invention in Germany, or who had made the necessary preparations for using the same.

The patent moreover has no effect in so far as the invention is intended to be used by order of the imperial chancellor for the army or navy or in the interest of public welfare. In such a case the patentee is, however, entitled to an adequate compensation by the empire or the state in whose special interest a limitation of the effect of the patent has been applied for. The amount of such compensation shall be fixed by a court of law in case an agreement cannot be arrived at.

The patent has no effect upon arrangements in means of conveyance (*Fahrzeuge*) which come but temporarily within the boundaries of the empire.

§ 6.

The claim to the grant of a patent and the patent-rights themselves pass over to the heirs. The claim and the patent-rights may be transferred partly or totally to other persons by agreement or by will.

§ 7.

The duration of a patent is fifteen years; the term commences with the day following the day of application. If an invention is an improvement upon another invention patented in favor of the applicant, the latter may apply for a supplementary patent, which expires with the patent for the original invention.

§ 8 (C).

At the issue of a patent a fee of 30 marks is to be paid.

Except in the case of supplementary patents (par. 7), a further fee must be paid for each patent at the commencement of the second and every subsequent year, amounting in the first instance to 50 marks and increasing by 50 marks per annum, for the time of duration of the patent.

A patentee who proves his want of means may have a respite in the payment of the fees for the first and second year until the third year, and if the patent expires in the third year they may be remitted entirely.

§ 9.

A patent expires if the patentee resigns the same, or if he fails to pay the fees within three months at the latest after they have become due.

§ 10.

A patent shall be annulled if it is found—

1. That the invention was not patentable according to paragraphs 1 and 2;
2. That the essential contents of the application had, without permission, been taken from the descriptions, drawings, models, implements, or arrangements of another person, or from a method of manufacture used by the same.

§ 11 (D).

A patent can be revoked after the expiration of three years—

1. If the patentee fails to carry out his invention in Germany to a suitable extent, or at least to do everything that is necessary to insure its being carried out;
2. If the grant of license to others for using the invention appears to be demanded in the interest of public welfare, but the patentee nevertheless refuses to grant such license upon an adequate compensation and against sufficient security.

§ 12 (E).

Any person not residing in the empire can only advance his claim to the grant of a patent and to the rights resulting therefrom in case of the appointment of a represent-

ative resident in Germany. The same is authorized to act in all proceedings by virtue of this law as well as in civil lawsuits concerning the patent. In cases of litigation against the patentee, the court in the district of which the representative has his domicile; but if there be no representative, the court of the district in which the patent office has its seat is competent for jurisdiction.

SECOND SECTION.

PATENT OFFICE.

§ 13 (F).

The granting of patents, the annulment and the revocation of the same, is vested in the patent office.

The patent office has its seat at Berlin. It consists of at least three permanent members, including the chairman, and of non-permanent members. The members are appointed by the Emperor; the other officials by the imperial chancellor. The permanent members are appointed on nomination by the federal council. If they hold an office of the empire or of a state, the appointment will be for the term of such office; in other cases for life. The appointment of the non-permanent members will be for five years. Of the permanent members at least three must have the qualification for the office of a judge or superior official of the administration; the non-permanent members must be expert in some branch of technical science. The regulations in paragraph 16 of the law of May 31, 1873, concerning the legal position of imperial officials, do not apply to non-permanent members.

§ 14.

The patent office consists of several departments. These are formed in advance for at least one year. Any member may hold office in several departments.

In case of the granting of a patent, the quorum of any department must not be less than three, among whom there must be two non-permanent members.

In the case of decisions regarding the nullity and the revocation of patents a special department shall be formed. For decisions of this department a quorum is required of two members, including the chairman, who have the qualification for the office of a judge or superior official of the administration and of three other members.

The provisions of the code of civil law with regard to the exclusion or refusal of members of court apply to the members of the patent office.

Experts who are not members may be invited to attend at legal proceedings, but they are not entitled to vote.

§ 15.

The resolutions and decisions of the departments are issued in the name of the patent office; they must be made out in writing, with statement of the arguments; and a copy of the same must be delivered officially to each of the interested parties.

Notifications by which special terms are fixed will be sent by post in a registered letter against receipt. If a notification cannot be delivered within the country, it will be forwarded by the appointed official of the patent office by post, in accordance with the provisions of the paragraphs 161 and 175 of the code of civil law.

The decisions of the patent office are subject to appeal.

§ 16.

If the decision of a department of the patent office is made the subject of complaint, such complaint shall be submitted to the decision of another department or of several departments jointly.

In this decision no member must take part who voted in the decision which is the subject of complaint.

§ 17.

The organization of the departments, the regulation of their spheres of duty, the form of procedure, and the order of business of the patent office will be determined by an imperial order with assent of the federal council, in so far as these points are not regulated by the present law.

§ 18.

At the request of the law courts the patent office is bound to give opinion in all questions concerning patents. The patent office is in no other case authorized to pass resolutions or to deliver opinions foreign to its legal business sphere without special leave of the imperial chancellor.

§ 19.

A register will be kept at the patent office, in which the subject-matter and the duration of granted patents will be entered, as well as the name and address of the patentees and of the representatives appointed by them on presentation of their applications. The commencement, the termination, the expiration, the decree of annulment, and the revocation of patents must be entered in this register, and simultaneously published in the *Reichsanzeiger*.

Should a change take place in the ownership of a patent, or in the representation of the patentee, such fact will likewise be entered in the register and publicly notified by the *Reichsanzeiger*, if brought to the knowledge of the patent office in duly testified form. As long as this is omitted, the former patentee and his former representative remain authorized and liable according to the provisions of this law.

The inspection of the register, and of the specifications, drawings, models, and specimens on the basis of which patents have been granted, is open to everybody, unless the patent concerned has been taken out in the name of the imperial administration for purposes of the army or navy.

The essential parts of specifications and drawings, so far as their inspection is permitted to the public, will be published by the patent office in an official paper. Therein will also appear all the notifications which must be published by the *Reichsanzeiger* in accordance with this law.

THIRD SECTION.

PROCEEDINGS IN PATENT MATTERS.

§ 20.

The application for the grant of a patent for an invention must be made in writing to the patent office. For each invention a separate application is required. The application must contain the petition for the grant of a patent, and must point out in a precise manner the subject-matter which is to be patented. In a separate form the invention must be described in such a manner that thereby the employment of the same by other persons versed in the particular trade to which it relates appears possible. It shall also be accompanied by the necessary drawings or other representations, models, and samples.

The patent office will issue regulations with regard to other requisites of application.

Up to the time of publication of the application it will be permitted to amend or alter the specification. On filing the application a fee of 20 marks must be paid for the cost of the proceeding.

§ 21.

Should an application be defective with regard to the prescribed requirements, the patent office will point out to the petitioner the defects, and demand of him the amendment within a specified time. Should this demand not be met within a given period, the application will be rejected.

§ 22.

In case the patent office considers that the application has been made in due form, and that there is no apparent objection to the granting of a patent, it will order the application to be published. From the date of publication, the subject-matter of the application will be provisionally protected in favor of the petitioner, according to paragraphs 4, 5.

If the patent office is of opinion that the invention cannot be considered as patentable, according to paragraphs 1 and 2, the application will be rejected.

§ 23.

The *Reichsanzeiger* publishes once the name of the petitioner and the chief points of his claims. At the same time the application and the accompanying papers will be laid open at the patent office for public inspection, and a notice inserted to the effect that the subject-matter of the application is provisionally protected against unauthorized use.

In case the imperial administration requests a patent for military or naval purposes, the application and accompanying papers will not be subject to public inspection.

§ 24.

After expiration of eight weeks from the day of publication (paragraph 23) the patent office has to resolve as to granting of the patent. Until that date objections

against the granting can be lodged with the patent office. They must be made in writing and be accompanied by arguments, which, however, can only be based upon the ground that the invention is not new, or that it comes under the suppositions of paragraph 3, clause 2.

Before finally deciding, the patent office may summon both parties to attend and be heard; it may also cause the objections to be examined by suitable persons skilled in some branch of technical science, and otherwise institute inquiries for elucidating the matter.

§ 25 (G).

Against a decision by which an application is rejected the petitioner may appeal within four weeks after its notification, and against the decision concerning the granting of the patent the petitioner or the opponent may appeal within the same time. On filing the appeal 20 marks must be paid for the cost of the proceeding; should payment not be made, the appeal will not be taken into consideration.

On the proceeding, paragraph 24, clause 2 is applicable.

§ 26 (H).

As soon as the granting of a patent has been definitely decided upon, the patent office will cause a notice to that effect to be published in the *Reichsanzeiger*, and then issue a document for the patentee.

If a patent is refused this will also be publicly notified. Upon the refusal, the provisional protection shall be considered as not having taken effect.

§ 27.

Proceedings with regard to the annulment or the revocation of a patent will only be instituted upon a motion. In cases provided for by paragraph 10, clause 2, only the injured party shall be entitled to forward such motion. The motion must be directed in writing to the patent office, and must contain the facts upon which it is based.

§ 28.

After the institution of proceedings has been ordered, the patent office will inform the patentee of the motion, and request him to deliver his answer to the same within a term of four weeks.

Upon default of the patentee the decision may ensue according to the motion without summoning and hearing the parties, and for such decision all the facts asserted by the mover may be considered as proved.

§ 29.

If the patentee lodges his reply in due time, or if, in the case of paragraph 28, clause 2, the motion is not decided upon immediately, the patent office will issue the necessary orders for investigating the matter, and, moreover, in the first case communicate the reply to the mover. It may also cause witnesses and experts to be examined. In this respect the regulations of the code of civil law will apply. The depositions must be taken down in writing by a sworn recorder.

The decision will be given after the parties interested have been summoned and heard.

In case motion is made for the revocation of the patent on the basis of paragraph 11, clause 2, the decision must be preceded by a warning with respect to the revocation of the patent accompanied by the reasons therefor, and a suitable time shall be fixed after which the revocation may take place.

§ 30.

In this decision (paragraphs 28, 29) the patent office has power to fix the amount of costs to be paid by either of the parties to the suit.

§ 31.

It shall be the duty of the law courts to render all legal assistance to the patent office. Upon special motion they will inflict fines on witnesses and experts who have failed to appear, or who declined to answer or to swear to their depositions; and, moreover, they will cause such witnesses as have not appeared to be brought before the office.

§ 32.

Against the decisions of the Patent Office (paragraphs 28 and 29) an appeal is allowed. Such appeal will be heard by the imperial supreme court of commerce. It must be

presented in writing to the Patent Office, with a statement of the reasons, within six weeks after communication of the decision.

In the sentence of the court the costs of the proceedings shall be fixed in accordance with paragraph 30.

In all other respects the proceedings in court will be determined by special regulations to be drawn up by the court and promulgated by imperial ordinance with the assent of the federal council.

§ 33.

Regarding the official language of the Patent Office, the provisions of the law concerning the organization of the law courts and the language to be used before them are to be observed. No action will be taken upon applications which are not written in the German language.

FOURTH SECTION.

FINES AND DAMAGES.

§ 34.

Whoever knowingly makes use of an invention in violation of paragraphs 4 and 5 shall be liable to a fine not exceeding five thousand marks or imprisonment not exceeding the term of one year, and shall be bound to pay damages to the aggrieved party.

Penal proceedings will only be instituted on motion being made to that effect.

§ 35.

If judgment is passed in penal proceedings, the aggrieved party will be authorized to publish the judicial decision at the expense of the defendant. The manner of publication and the time within which the same must be effected shall be fixed in the decree.

§ 36 (K).

Instead of damages to be awarded according to the provisions of this law, the court may, on request of the aggrieved party, adjudicate, besides the ordinary fine, a payment of compensation not exceeding 10,000 marks. For this amount all defendants shall be jointly liable.

Such compensation being adjudicated, all further claims for damages will be excluded.

§ 37.

The competency of the imperial supreme court of commerce, regulated by paragraph 12 of the law of June 12, 1869, concerning the establishment of a supreme court of commercial affairs, shall be extended to such civil law suits in which by action a claim is advanced on basis of the provisions of this law.

§ 38.

The term within which an action may be brought for an infringement of patent right is limited to three years with regard to any single case by which such action may be supported.

§ 39.

The question whether damage has been caused, and to what amount, will be decided by the court, according to unbiased conviction, after due consideration of all circumstances.

§ 40.

Sentences will be passed for payment of a fine not exceeding 150 marks or imprisonment:

1. On any person placing on articles or their packing any designation calculated to cause the erroneous impression that such articles are protected by a patent in accordance with this law.

2. On any person who, in public advertisements, on sign-boards, on business-cards, or in similar notifications, employs a designation calculated to cause the erroneous impression that the articles thus mentioned are protected by a patent in accordance with this law.

FIFTH SECTION.

TRANSITORY RULES.

§ 41 (L).

The patents in force at the present time, by virtue of state laws, shall remain valid, according to the provisions of such laws, until their expiration; but no prolongation of their term shall be granted.

§ 42 (M).

The holder of an existing patent (paragraph 41) may claim the grant of a patent, by virtue of this law, for the invention protected by the former. The examination of the invention in such case is subject to the forms prescribed by this law. The patent shall be refused if the holder of another patent in force for the same invention (paragraph 41) claims the grant of a patent or raises opposition against the grant before such grant has been decided upon. For want of novelty the granting of the patent shall be refused only in case the invention was not new in the sense of paragraph 2 at the time when first patented in Germany.

On the granting of a patent in accordance with this law all patents in force for the same invention (paragraph 41) shall become void, if they are in possession of the holder of the new patent. If this is not the case, the new patent will not take legal effect in the district in which the existing patent is valid before the expiration of the latter.

§ 43.

The time during which an invention has been protected in Germany, by the oldest of the patents in force, shall be deducted from the legal period of duration of the patent granted according to paragraph 42. The patentee shall be bound to pay for the remaining term of his patent the legal fees (paragraph 8). The date of payment and annual amount of the fees shall be fixed according to the time at which protection was first granted to the invention in Germany.

§ 44.

By the grant of a patent, according to paragraph 42, persons who had already been using the invention, without infringement of a patent right at the time a patent for the same was applied for, or who had made the necessary preparations for using the same, shall not be precluded in such use.

§ 45.

This law shall come into force on the 1st of July, 1877.

BALNEATORY EXHIBITION IN GERMANY.*REPORT BY CONSUL-GENERAL LEE, OF FRANKFORT-ON-THE-MAIN.*

Referring to my dispatch of January 17 last,* I have to inform the Department that this office has been formally advised that in connection with the exhibition of German patented and registered articles to be held in this city (Frankfort-on-the-Main) during the months from May to October, inclusive, in the year 1881, there will also be held, in a separate building, to be provided especially for the purpose, a balneatory exhibition (Balneologische Ausstellung), the object of which will be, as stated, to furnish a collective exhibit of what is denominated the cure and bath industry of Germany.

A good idea of the scope of this project may be formed from a synopsis of the articles which it is intended to exhibit, viz:

1. Mineral waters, with accompanying analyses, and descriptions of the topographical formations in the vicinity of the various springs.

* See report immediately preceding this.

2. Natural products formed from mineral springs, such as stalactites, incrustations, peat soil, and other formations.

3. Preparations from the springs, such as salts and lyes, and the substances necessary to their representation.

4. Water-elevating apparatus, drinking-vessels, jugs, corks, capsules, labels, bottling, washing, and corking machines, and similar articles.

5. Bathing-tubs, with heating apparatus for bog, mud, and sand baths.

6. Russian, Roman, and Irish baths, with the different douches of cold and warm water. Also washing apparatus, flesh towels, and flesh gloves.

7. Inhaling apparatus, gas, and compressed air baths.

8. Sea-bath carriages, strand watch-houses, invalid chairs, and portable and movable chairs.

9. Such electrical machines and gymnastic cure apparatus as are used at water cures.

10. Gymnastic exercises which give free motion to the body, such as cricket and lawn tennis; also sea-bath and playing costumes.

11. Canal and drainage systems.

12. Meteorological apparatus.

13. Situation, plans and views of baths, drinking and cure houses, pictorial representations of the climate of bathing places, relief pictures.

14. Balneatory literature and statistics. Ancient history of single baths, with specimens of relics and views.

An exhibition of this kind, it is said, has never yet been held in Germany, and as the country, particularly in this part of the empire, abounds in mineral springs and summer resorts, some of which were well known and much frequented as long ago as in the time of the Romans, there are reasons for believing that this exhibition may prove to be one of much more than ordinary interest.

It may also be remarked that many of the springs which will be represented are now making large shipments of their waters to the United States, and that many others are extensively visited by tourists, invalids, and pleasure-seekers from our country.

To those who wish to obtain comprehensive information concerning German watering places, and also concerning the German method of conducting bathing and cure establishments, this exhibition will also probably furnish some unusual advantages.

ALFRED E. LEE,
Consul-General.

UNITED STATES CONSULATE,
Frankfort, April 5, 1880.

BI-METALISM IN GERMANY.

REPORT BY CONSUL-GENERAL LEE, OF FRANKFORT-ON-THE-MAIN.

Contemporary with the very decided and significant declaration in the recently-published annual report of the Chamber of Commerce of Cologne, in favor of the continuance of the single gold standard in Germany, and of the financial policy sustaining that standard, have appeared in the German press some arguments to the same purport and effect from Professor Soetbeer, an eminent economist, whose relations to the discussion of this subject are similar in this country to those occupied by the late Walter Bagehat in England.

These views of Professor Soetbeer, as also those of the Cologne Chamber of Commerce, have been published with approving comments by the daily *Handelsblatt*, of this city, whose position as one of the leading financial authorities of the German press is such as to lend significance to its opinions.

Taken in connection with the recent action of the Federal Council in favor of adhering to the single standard policy, there does not seem to be much ground to doubt that these expressions fairly represent the decidedly preponderating public opinion in Germany at the present time, and indicate the policy which will, in all probability, be tenaciously adhered to by the Imperial Government.

In this important center of financial influence there is not, and during the past three years has not been, any material demand for a double standard. On the contrary, great satisfaction is almost universally expressed by bankers and business men with the new coinage system, and also with the single standard policy, as being, on the whole, greatly to the advantage of the financial and business interests of the country. Certain coinage reforms, it is true, are vigorously advocated from time to time, but they do not look to the establishment of a double standard.

Silver circulates freely as a subsidiary coinage, in association with gold and national paper redeemable in gold, and seems to be sufficient in quantity for the requirements of business.

The hoard of surplus silver which the government still holds for sale amounts, according to the latest reliable estimates, to 339,000 pounds of fine-silver, and it is considered very desirable that this surplus should be marketed while the demands for Indian loans and the monthly coinage of silver in the United States continue to influence the prices of that metal.

That our monthly coinage does influence the price, and so afford the government a material auxiliary in getting rid of its surplus, as well as in preventing the export of gold, is and has been a very general opinion. It is possible that a great and general revival of prosperity, or the outbreak of a European war, might so change the financial conditions of Germany as to cause some change of policy as to the disposal of the national silver hoard; but the maintenance of a single standard rests on different grounds, and is apparently beyond the reach of any present or approximate contingency.

A compendium of Professor Soetbeer's views, above referred to, is herewith inclosed for the information of the Department.

ALFRED E. LEE,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Frankfort-on-the-Main, August 9, 1880.

THE PROSPECTS OF BI-METALLISM.

Under this title Professor Soetbeer publishes in the "*Nieuw Frois Presse*" two articles which, like all the publications of this expert, who even by his opponents is held to be one of the most thorough masters of the subject, deserve attention.

Professor Soetbeer shows that a double standard, in the true sense of the term, does not in any country exist, a vital condition of the same being that silver as well as gold shall in unlimited quantities, according to a legally established relation of value of the metals to each other, be coined as the current money of the country, and this is now nowhere the case.

In Great Britain and in the Scandinavian state exists the pure and sole gold standard; in British India the pure and sole silver standard. In the other countries, as far

as they do not suffer under a paper currency, systems of coinage are at this moment in force, which, in certain respects, have the appearance of a double standard, but practically are to be considered as modified gold standards.

In Germany we have theoretically the pure gold standard, and the actual coin circulation stands very near it, for besides the 1,800,000,000 of marks in gold coins and 427,000,000 of marks in subsidiary silver coins, there are only about 410,000,000 of marks of the old silver coins in circulation.

Then follows Holland, for here, too, the pure gold standard is in theory recognized, and the coining of silver currency definitely stopped; as a matter of fact, indeed, the circulation of the old silver florins preponderates, which coins, however, with Holland's favorable balance of trade, retain their full nominal value as quotas of the new gold coins both in the mother country and in the colonies, and thus exercise no influence over the par of exchange.

Then come France, Belgium, and Switzerland, in which countries the double standard has not been theoretically and really discarded, but only for the time being suspended, but where, in fact, as the course of exchange shows, the gold standard is still in vogue, in spite of a circulation, or at least quantity on hand, of about 3,000,000,000 francs in silver five franc pieces.

The present coinage system of the United States of America is, from a legal point of view, nearer to the double standard than that of any other country, since here, side by side with the coining of gold pieces, at least two millions of silver dollars must be coined monthly, and these are legal tenders, just the same as gold; but really even here the gold standard has had the preponderancy, for the wholesale trade and the banks excluded by special contracts the use of silver money as a legal tender for amounts exceeding \$10.

Whether the bi-metallists in the next Congress will be able to hold what they have already gained, or whether they will make further progress, is not to be foreseen. Both parties are very strong. The bi-metallists received substantial support from the restless efforts of Mr. Cernuschi, while the gold-standard cause lost a most powerful advocate in the death of Mr. Feer-Herzog.

When the silver pieces towards the end of 1878 and the commencement of 1879 so materially fell, the bi-metallists succeeded in bringing over to their side, in the United States and England, several hitherto opponents (among others the former Secretary of the Treasury of the United States, Mr. McCulloch, and Messrs. Cazolet and Gibbs, in London), but in spite of all this, bi-metallism has not succeeded in obtaining a stronger foothold since that time, neither in America nor England.

The American bi-metallists also have endeavored to attain their ends here in Germany, but have gained no results as against the German Government, and though they are now endeavoring to influence public opinion, and in this manner eventually the government itself, it is not to be expected that they will succeed in doing so.

When taking the wishes and proposals of the bi-metallists into consideration, it should not be forgotten that by far the greater number of them desire the establishment of the double standard simply for the purpose of fixing the price of silver at its normal rate before 1874, viz, the rate of 15½ to 1.

The great mistake of the bi-metallists lies in the opinion held by them that the fixing of the ratio of the value between gold and silver is dependent on the arbitrary provisions of coinage laws, so soon as the principal nations might by treaties settle upon a fixed ratio, and that the re-establishment of silver as thus brought about would cause losses to none; but at the same time bring great advantages to holders of claims payable in silver. It is here forgotten that an artificial raising of the price of silver is identical with a corresponding depression of the value of gold, and that the gains of those who under these circumstances receive silver are exactly counterbalanced by the losses of those who are obliged to pay this silver.

In Germany the bi-metallists have all the less hope for success, because the Federal Council has just lately declared that it finds no motive for deviating from the fundamental principles of the coinage laws of 1871 and 1873.

"The prospects of bi-metallism," Professor Soetbeer concludes, are everywhere very slim; only in case it should occur that the followers of the same succeed in gaining over to their side the public opinion of England can a serious practical consideration of their proposals be expected on the part of the governments concerned. It is, however, very improbable that this will happen. The strong and sudden fluctuations and the progressive depreciation of silver will not, on this account, continue as has hitherto been the case, but, after the coinage policy of the United States has definitely been settled upon, a more quiet state will most likely ensue.

THE IRON, STEEL, AND COAL INDUSTRIES OF GERMANY.

REPORT BY CONSUL-GENERAL LEE, OF FRANKFORT-ON-THE-MAIN.

Herewith I forward, for such disposition as the Department may deem proper to make of the same, a report of the proceedings of the recent meeting of the iron and steel institute at Düsseldorf-on-the-Rhine.

In this connection it seems proper to say that the institute is the principal association of its kind in Europe, formed for the advancement of the iron and steel industries, and that it has now been in existence for eleven years. The meeting at Düsseldorf is the third one which has taken place outside of Great Britain, the first one having been held at Liege, in Belgium, in 1873, and the second at Paris, during the International Exposition two years ago.

The proceedings of the Düsseldorf assembly seem to me to be of great interest and importance to the producers of iron and steel in the United States, especially as showing the latest phases of that industry, and its various means and methods of improvement in the Old World.

The report herewith submitted gives a full statement of the proceedings and discussions, and also full copies of the principal papers presented at the meeting.

As pertaining especially to the iron, steel, and coal interests of Germany, by far the greater part of which, as may be seen, lie within the territories comprising this jurisdiction, I would respectfully invite attention to the following papers read before the institute:

1. The iron industry of Germany, by Dr. Hertmann Wedding.
2. On pig-iron making in Germany, by Mr. J. Schlink, of Mulheim-on-the-Ruhr.
3. The coal industry of the Lower Rhine and of Westphalia, by Dr. Gustav Natorp, general secretary of the Society for Mining Industries of Dortmund.
4. On the results obtained with various systems of iron permanent way on the Prussian State railways and on private lines managed by the Prussian Government, by E. Grultfeien, Geheimer Baurath in the Ministry of Public Works.

ALFRED E. LEE,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Frankfort-on-the-Main, September 27, 1880.

THE IRON INDUSTRY OF GERMANY.

BY DR. HERTMANN WEDDING.

The iron industry of Germany can be traced back to antiquity (¹), but the few notices which are found in our literature as to the processes in use up to the middle of the 16th century (²) prove, together with the numerous old slag-heaps which have been discovered, that up to that date the production of iron had been confined to the direct manufacture of malleable iron from ores, in hearths and low shaft furnaces, by means of charcoal.

And even when the indirect process of manufacture of malleable iron by refining with charcoal out of pig-iron, also produced with charcoal, but in high furnaces (³), gradually took the place of smelting by direct process, the total production remained insignificant, although Germany had then assumed a very forward place in the rank of

iron-producing nations, and even England imported a large proportion of her iron for consumption from this country.

It was only after the invention of the steam-engine had given to coal its true value as fuel (¹), and when coal was used in the shape of coke for the high furnace, and in its raw state for the puddling process, that a period of development commenced, which has given to the manufacture of iron its dominant position among our industries.

Although this period began in Germany already at the end of the last century (²), it was only towards the middle of the present century that the use of fossil fuel became general (³), the development of railways having materially facilitated its transport.

The introduction of the Bessemer process in the year 1861 paved the way to the production en masse of ingot iron (*Flusseisen*), which was, however, not fully appreciated until the year 1867. Since that date—by the increase of the volume of the high furnace, by the abundant quantity and high temperature of the blast, by the avoidance of stoppages (introduction of water tuyeres for the cinder) in high-furnace work, by the augmentation of the number of heats in the Bessemer converter, by the introduction of gas and regenerators in the production of ingot iron, cast steel, and weld iron in the manufacture of malleable iron, by the use of strong and rapid rolls, and by the avoidance of waste work in shaping—those admirable results have been obtained which have had no small share in causing the present entire change in the position of the iron market.

Germany holds at present the third rank among iron-producing countries. The development of the production of pig-iron, of cast-iron wares of second smelting, of weld and ingot iron since the year 1837, are shown by the graphic tables Nos. 1, 2, and 3 (⁴), here exhibited.

These show the steady increase in the production of iron in general and in every direction, with only exceptional fluctuations, but quite especially the increased influence of ingot iron in contradistinction to forge iron. We may not refuse to acknowledge, it would be, indeed, ungrateful to pass over in silence before our English guests, the fact that by far the greater number of important inventions and improvements in the manufacture of iron have proceeded from Great Britain; but you, our English visitors, will also acknowledge, as soon as you shall have learned to know our iron industry, that on the other part the Germans have known how to adapt that which they have received from you to their local circumstances with advantage, and to develop it in a way peculiar to themselves. The bases of our iron industry are fundamentally different from those of Great Britain.

With respect to our coals, which, with the exception of a few smaller deposits, are divided among the principal basins of Upper Silesia, Lower Silesia, Zwickau, Rhineland-Westphalia (basin of the river Ruhr), Aix-la-Chapelle (basin of the rivers Inde and Wurm), and are exceptionally available for high-furnace fuel in their raw state, as our so-called meager coals contain too large a quantity of gas, while in Great Britain the basins of South Wales, Staffordshire, and Scotland contain coals excellently suited in their raw state for the production of pig-iron. And while the iron industry of Great Britain, with the exception of that in Cumberland and Cleveland, has developed itself in the coal districts themselves, this is in Germany only the case, in any considerable measure, in the coal basins of Upper Silesia, Rhineland-Westphalia, and Saarbrück. (⁵)

As to the iron ores themselves, it is true that Germany contains them in equally rich quantities with Great Britain, but there is a marked difference in the quality. Only the comparative scarcity of magnetic iron ore is common to both countries. On the other hand, the argillaceous and blackband ores are found in Germany in entirely insufficient quantity for our iron industry in the large coal basins, and are generally characterized to their detriment by a large percentage of phosphorus. Our principal iron ore consists in brown iron ores, which are partly found in a soft form on the limestones of the older, and especially of the Devonian Permian and shelly limestone formations, or as oolitic pieces (*Minette*) in the Jura formation, as pea ore in the chalk, as bog ore in the Alluvial formation; often also as a product of oxidation of other ores. The red iron ores which especially follow the Devonian formation are unfavorably distinguished from those of the Cumberland by their high percentage of phosphorus. Germany is far richer than England in spathic ores, which provide an excellent material for the production of spiegeleisen. (⁶) Our ores are characterized in general by a high percentage of phosphorus and of manganese, in consequence of which the manufacture of a white pig-iron, suitable for the puddling process, preponderates in our pig-iron production, while the proper descriptions of ores for the Bessemer process and for the production of cast iron have to be carefully selected, and, indeed, supplemented by the importation of South European and African ores; for which reason the invention of the dephosphorization of pig-iron is of the highest importance for Germany. Suitable fluxes for the production of pig-iron are found in the earlier and later formations of nearly all iron-ore districts. Although it is true that the short distances between the iron and coal mines, which are the rule in Great

Britain, are also often to be met with in our country—for the brown ore of Upper Silesia proceeds from the shelly limestone formation covering the edges of the coal measures, while the black-band and granular spathic ores of Westphalia belong to the coal measures themselves—yet it is only in scarce cases that the local production of ore suffices for the consumption of the iron industry, and in by far the majority of instances the distances between the iron and coal beds are very considerable. But what places our German industry at even a more decided disadvantage, as compared with that of Great Britain, is the difficulty of the transport of our products. All our iron districts are situated in the interior of the country, and but few of them enjoy the advantage of water transport; most of them having to rely solely upon the railways. These deficiencies, which are a consequence of the nature of the country itself, cannot, in the opinion of the German high-furnace proprietors, be entirely neutralized even by their availing themselves carefully of all improvements in technical aids to production, and they have therefore asked for and obtained a protective duty on iron. The maps here exhibited with the consent of his excellency the minister for public works have been compiled by myself from official sources, and present, as I hope, a clear picture of the distribution of the production of ore and of pig-iron, as well as of the various products of the latter, cast-iron ware of the second smelting, ingot iron, and weld iron, for the year 1878⁽¹⁰⁾. The map showing the production, consumption, and circulation of pig-iron on the one hand (No. 6), and of malleable iron on the other hand (No. 7), of which the first is in print, the second as yet only in manuscript, give at the first glance a clear picture of our situation as regards the transport of our own and foreign products.

Our English visitors will no doubt see with pleasure the powerful influence which the importation of British pig-iron exercised in 1878⁽¹¹⁾. Let us hope that the maps which we are about to prepare for the year 1880 will give a materially altered picture, and that the protective duty will have its anticipated effect to the full extent in encouraging German industry, and that thereby the disadvantages attending every such check to the freedom of trade may be fully neutralized.

Permit me now to supplement this general survey by short descriptions of the separate iron-producing districts, as far as the time allotted to me will allow⁽¹²⁾.

I. PRODUCTION OF PIG-IRON.—A. *Upper Silesia*.—The iron industry of Upper Silesia has its central point in the great coal district, the largest in Germany, extending in its principal lie from Zabrze to Myslowitz, and showing itself to the south in various branches, reaching beyond the frontier of our country toward Moravia and Poland, far under the later formations which cover it⁽¹³⁾. The seams are regular in stratification, often of great thickness (3 to 4 meters); the western parts of the great basin contain coking coal, near Königshütte half-bituminous coal, and in the eastern parts anthracite coal. In the smaller basins is found principally anthracite coal⁽¹⁴⁾. The coal measures themselves are poor in iron ores, which present themselves as argillaceous ores (sphaerosiderit), but the adjacent trias formation, and especially the shelly limestone overlying the coal measures, is rich in soft brown iron ores, containing lead, zinc, and often manganese, mostly with much phosphorus, and found in irregular nests and groups. Their percentage of iron is seldom much more than 20 per cent. They furnish the principal material for the coke high furnaces of Upper Silesia, while the few charcoal furnaces still in existence more generally use the argillaceous iron ores, which are found in the Keuper and brown Jura formations in the form of lump and kidneys. The brown iron ores, in consequence of their percentage of phosphorus, are only exceptionally available for the production of Bessemer pig. In order to enrich the charge, and at the same time to loosen it, furnace and refining slag is added; for the same reason, and also for the improvement of the quality of the pig, foreign ores are added, such as spathic ores from Hungary, magnetic ores from Sweden, and red iron ores from Lower Silesia (Willmannsdorf).

In the year 1878, 99,962 cwt. of charcoal pig and 5,249,937 cwt. of coke pig were produced out of 14,299,046 cwt. of ore, of which 680,755 cwt. were foreign ores and 2,106,042 cwt. slag. Of this iron 257,529 cwt., or 4.81 per cent., was used for castings; 468,054 cwt., or 8.75 per cent., was used for ingot iron; 4,599,282 cwt., or 85.91 per cent., used for weld iron.

It will be seen that by far the greater proportion of the iron furnishes material for the puddling process. The cost of production of such iron amounts to 2 to 2.7 marks per centner (40s. to 54½s. per ton), while casting pig costs 2.70 to 3 marks per centner (54½s. to 61s. per ton), and Bessemer pig even as high as 4 marks per centner (81s. per ton).

Adjacent to Upper Silesia is Lower Silesia, containing a second important coal district, producing excellent coking coal. But although there are in the neighborhood some mines of magnetic ore (Schmiedeberg) and of red iron ore (Willmannsdorf), no extensive production of pig-iron has been developed. On the other hand the coke finds an easy sale for foundry purposes partly in Upper Silesia, partly in the numerous foundries of the North German lowlands, where the indirect production of castings has replaced the former manufacture of charcoal pig out of bog-iron bars. Upper

Silesia, with the adjacent districts, produced in 1878 5,369,459 cwt. of pig-iron, being 12.50 per cent. of the entire German production (including Luxemburg), which mounted to 42,952,828 cwt.⁽¹⁵⁾.

B. *Smaller districts of Central Germany.*—Between the coal basins of Upper Silesia and Westphalia there are situated in the mountains of Central Germany, which form the southern frontier of the North German plains, districts rich in iron ore; and there are also in these parts a few not unimportant, though smaller, coal basins, such as those of Pötschappel, Zwickau, Wettin, and Löbejün, and the Wealden coals on the Deister, in the Ostemale, and near Oberkirchen, but no regular iron industry has developed itself in connection with the same.

The most important works are in the Erzgebirge; the charcoal-iron furnaces near Schwarzenberg, which produce pig-iron for casting and refining purposes out of red iron ores; the Königin-Marienhütte, near Zwickau, based upon that coal district, but procuring its ore from a considerable distance, especially from the Voigtland and Fichtel Mountains and from the Western Erzgebirge, and producing pig-iron for its own puddling works, which are, however, unable to dispense with an addition of foreign pig-iron⁽¹⁶⁾.

Next to these come several works in the Thuringian forest, where, besides numerous small deposits of red and magnetic ores in the crystalline and earlier sedimentary formations, the Permian limestone, near Schmalkalden and Kamsdorf, is rich in spathic ore. Among these the most important work is at Unterwellenborn, producing out of Kamsdorf ores Bessemer pig-iron, which is worked upon the spot into ingot iron for the use of the Maxhütte in Bavaria. These works distinguish themselves by exceptionally low cost of production: 3.45 marks per centner (64s. per ton) for gray Bessemer iron, 2.4 marks (48s. per ton) for white puddling iron.

There is rather more coherency in the iron industry of the Hartz Mountains, which is founded partially upon the reduction of Devonian red and brown ores from the interior of the Hartz Mountains, partially upon oolitic and pea ores in the Lias and in the chalk of the northwestern foot-hills, and on the phosphoric pea ore found still farther north at Gross Bulten. The ores of the inner Hartz Mountains are smelted for the most part in charcoal furnaces at Rothehütte, Rabeland, Ilsenberg; for casting pig and castings, the only coke high furnace is at Blankenberg. They are also partly exported to Westphalia. Of those works which the pea ore of the foot-hills of the Hartz, the most important is the Ilserderhütte, near Peine, producing about 335,000 cwt. of pig-iron in coke-blast furnaces at a very low cost of production (1.29 marks per centner, 26s. per ton), and which can therefore be sent to considerable distances, although it contains two to three per cent. of phosphorus. Still farther to the westward are to be found a few deposits of tertiary pea ore in connection with the basalt piercing the Trias formation, and which serve as material for a few small iron works producing castings. The whole of this Central German district produces only 4,050,128 cwt. of pig-iron, viz. 9.42 per cent. of the total production of Germany, and of this the Ilserderhütte alone produces 34.26 per cent., and Unterwellenborn 6.86 per cent.

C. *District of the Lower Rhine and Westphalia.*—The basis of the iron industry of the Lower Rhine and Westphalia is the coal basin of the river Ruhr, which is uncovered only on its southern frontier, where it leans against the strata of earlier formations, but which has been proved to exist from the neighborhood of Hamm across the Rhine, and far in a northerly direction under the cover of the later chalk strata⁽¹⁷⁾.

The coal is divided into four groups of seams⁽¹⁸⁾, the lowest of which contains sandy coals, upon which are superposed half-bituminous, coking, and finally gas coals.

The coal measures appear again separately to the eastward, between the northern foot-hills of the Weser Mountains and of the Teutoburg forest near Osnabrück and Ibbenbüren⁽¹⁹⁾.

In the coal formation there are found several rich deposits of black band, which are especially developed in the neighborhood of Hörde, and some seams of granulated argillaceous ore near Hattingen. Besides, the strata bordering on the coal measures to the south, especially those of the Medio-Devonian limestone, and the eastern frontier hills of the bight of Münster, contain in Lias and Jura, in the chalk and diluvial formations, numerous deposits of iron ore, insufficient, however, to supply the wants of the home iron industry, which has to make up the deficiency with foreign ores, spathic and brown iron ores from Siegerland, red and brown ores from the Lahn and from the Eifel, bog ores from Holland, red, magnetic, and brown ores from Spain and Algeria, with an insignificant quantity of Luxemburg and Swedish ores. Although in this district the material for the production of puddling iron is principally represented, yet those ores are not wanting which, if judiciously selected, produce good foundry iron.

The district of Osnabrück contains in the Permian formation brown and spathic ores, which supply the high furnaces of the Georgs-Marienhütte. With the exception of the latter all the inland ores contain more or less phosphorus, so that it is necessary in producing iron for the Bessemer process either carefully to select them or to use foreign ores. In the year 1878 the district of the Lower Rhine and Westphalia pro-

duced 13,073,443 cwt. of pig-iron out of 27,042,692 cwt. of ore (of which 4,729,047 cwt. were foreign ores), and out of 2,323,628 cwt. of furnace and refining slag⁽²⁰⁾.

Besides the above the Georgs-Marienhütte produced 961,951 cwt. of pig-iron out of 4,208,597 cwt. of ore.

Of the whole production of the district, *a*, 755,477 cwt., *b*, 22,032 cwt., or 5.54 per cent. were for foundry purposes; *a*, 4,280,579 cwt., *b*, 813,969 cwt., or 36.32 per cent. for ingot iron; *a*, 8,021,743 cwt., *b*, 135,600 cwt., or 58.05 per cent. for weld iron.

The production of the district of the Lower Rhine and Westphalia amounted to 32.68 per cent. of the total production of Germany. The cost of production varied considerably, but we can take as an average 2.25 marks per centner (45s. per ton) for ordinary puddling iron up to 3 marks per centner (60s. per ton) for superior puddling iron, and 3.05 to 3.50 marks per centner (61½ to 71s. per ton) for Bessemer pig-iron.

D. Siegerland, the Middle Rhine, and the Lahn.—To the south of the Westphalian coal district an iron industry has been developed, formerly independent of the same, but now most intimately connected with it. It is based on the numerous and to some extent very thick lodes of manganiferous, spathic, and brown iron ores found in the Lower Devonian strata of Siegerland, formerly exclusively smelted with charcoal, now almost exclusively with coke, for the production of superior qualities of iron, especially of spiegeleisen and of white puddling iron, and partially exported to the neighboring iron districts⁽²¹⁾.

The deposits of iron ore extend as far as the Rhine, forming there a basis for the high furnace industry of the Middle Rhine near Coblenz⁽²²⁾.

To the south (separated by the Westerwald) are found the red and brown iron ores, lying in a basin of Upper Devonian formation in the basin of the river Lahn, which are smelted to a comparatively small extent at the place of production, and are principally exported to furnish material for the other iron districts of the western provinces of Prussia. These deposits are found generally, together with diorite, in shallow basins, between Königsberg and Lixfeld on the one hand, Diez and Langenaubach on the other hand. The district between Königsberg and Lixfeld, which is cut through by the river Lahn, is 68 kilometers long and over 15 kilometers broad, and is the most important one. The ores are partly soft, partly hard red and brown ores, mostly rich in lime, and manganiferous, invariably containing phosphorus. The eastern furnaces which smelt these ores (Main-Weserhütte, near Lollar) use also basaltic ores of the group B.

The respective production is as follows: *a*. Siegerland: 3,223,199 cwt., of which 27,387 cwt. for foundry purposes; 571,293 cwt., for production of ingot iron⁽²³⁾; 2,624,519 cwt. for weld iron⁽²⁴⁾. *b*. Middle Rhine: 4,396,394 cwt., of which 91,083 cwt. for foundry purposes; 2,402,117 cwt. for production of ingot iron: 1,903,194 cwt. for weld iron. *c*. Lahn district⁽²⁵⁾: 398,386 cwt., of which 112,761 cwt., for foundry purposes; 285,625 for weld iron. The production of Siegerland was 7.50 per cent.; that of Middle Rhine, 10.24 per cent.; that of the Lahn district, .93 per cent., of the whole production of Germany.

E. Upper Palatinate (Bavaria) and Württemberg.—The pig-iron industry of the Upper Palatinate in Bavaria has nearly entirely disappeared in consequence of the reduction in the available stocks of timber. The important iron-works Maximilianshütte imports its pig-iron from Untervellenborn, in the Thuringian district. The same is the case with the iron district of Württemberg, which formerly produced foundry iron, in charcoal furnaces, out of the oolitic and pea ores of the Jura formation, on the right bank of the Rhine, but which now uses principally imported pig-iron.

The total production of this district is: Bavaria, 537,528 cwt.; Württemberg, 237,776 cwt.; together, 765,304 cwt.; or 1.78 per cent. of the total German production.

F. District of the Saar.—The coal district of the Saar, on the southern edge of the Hunsrück Hills, extends, interrupted by elevations of porphyry and melaphyre, and covered in many places by the new red sandstone, over about 60 square German miles (1,100 square English miles), and passes the frontier of the Prussian state into both the Bavarian, Palatinate, and Lorraine⁽²⁶⁾. The coal measures contain more than 90 workable seams, with an aggregate thickness of 30 meters, bearing from east to west. The underlying seams contain a coal which can be easily coked, but which is inferior to the Ruhr coal in respect of the strength of the coke. The middle and overlying seams contain a long-flame semi-bituminous coal, passing into anthracite coal in the upper seams⁽²⁷⁾. More than 100 seams of sphaerosiderite are known in the coal measures, but neither these nor the iron ores found northwards on the Devonian schists of the Eifel suffice for the wants of the iron industry, which draws its iron-ore material from the next following district⁽²⁸⁾. The pig-iron production of the Saar district amounts to 2,252,024 cwt., or 5.24 per cent. of the total German production, only a small proportion (93,000 cwt., of which about the half is charcoal iron) for foundry purposes, by far the greater quantity being used for weld iron. The cost of production of the puddling pig, which is rich in phosphorus, averages 37 to 38 marks per 1,000 kilos. (37s. to 38s. per ton).

G. Lorraine and Luxemburg.—Lorraine and Luxemburg contain, with exception of

the insignificant territory which belongs to the Saar coal basin, no fossil fuel. The production of pig-iron common to both countries is based upon the rich deposits of minette, on oolitic brown iron ore, sometimes containing silica, sometimes lime, which is found in very regular deposits on the boundary of the Lias and the brown Jura. The greatest development of this deposit, which can be traced from Esch, near the city of Luxemburg, as far as Nancy, is found in Luxemburg, whence the number and thickness of the deposits gradually decrease (²⁹). The ores are rich in phosphorus, but on account of the ease with which they can be won, and of the possibility of making a good mixture, they give a very cheap pig-iron, although the fuel has to be brought a long distance—principally from Westphalia, but also from Belgium and Saarbrück (³⁰). The cost of production averages, for puddling pig-iron, 35 marks per 1,000 kilos. (35s. per ton). The production of Lorraine amounts, like that of Luxemburg, to about 5,000,000 cwt. of pig-iron, which, with the exception of about 500,000 cwt. in Lorraine, and 89,000 cwt. in Luxemburg, which are used for castings, finds a sale for welding purposes. We cannot, however, at present, foresee what change the process of dephosphorization of iron may bring about in this respect. The production of this district amounts to 9,777,874 cwt., or 22.77 per cent. of the total German production.

H. District of Aix-la-Chapelle.—The smaller coal basins near Aix-la-Chapelle (on the Inde and the Wurm (³¹), as well as the deposits of iron ores in the adjacent earlier strata to the south, especially of soft brown ores on the boundaries of the Devonian and Carboniferous limestones with schist, as well as of red and brown ores in lodes in the Eifel (³²), have called forth a limited pig-iron industry, particularly near Eschweiler, producing, with charcoal, about 10,000 cwt. of pig-iron from 30,000 cwt. of ore, and, with coke, 260,000 cwt. of pig-iron out of about 520,000 cwt. of ore (among which some foreign ores), and 100,000 cwt. of furnace and refining slag. The production of this district amounts to .63 per cent. of the total German production.

II. MANIPULATION OF PIG-IRON.—The manufacture of castings, ingot, and weld iron is not concentrated in Germany in special districts, like that of pig-iron, which attaches itself either to the coal or the iron deposits. It is true that in this case also the cost of transport of pig-iron and fuel is of so much importance that most of these works have established themselves in the immediate neighborhood of the blast furnaces producing the pig-iron, and belonging, in many cases, to the same proprietors; nevertheless, on the other hand, the lesser or greater ease in obtaining foreign material, the accumulation of sufficiently-skilled laborers, favorable circumstances for disposing, &c., of the manufactured article, have also a considerable influence on the situation of such works.

The map here exhibited shows the mode of distribution of the various descriptions of iron in the form of castings, weld and ingot iron manufactured out of pig-iron, according to districts and divisions of the country.

1. *Castings.*—The governmental district of Düsseldorf is of special importance with regard to the quantity of pig-iron used for foundry purposes, being 861,172 cwt. It is followed by the Kingdom of Saxony, with 837,234 cwt., after which come the districts—

	Cwt.
Liegnitz	705, 477
Arnberg	612, 007
Magdeburg	514, 245
Oppeln	428, 432
City of Berlin	365, 401
Alsace	359, 859
District of Trèves	350, 909

All the other districts have a production of less than 300,000 cwt.

Out of the 957 foundries, 324 produced solely castings; 154 were combined with other iron-works, and the rest with other establishments, especially with mechanical works.

2. *Weld-iron.*—There is still a considerable number of fining forges in Germany working with charcoal. In 1878 there were 178 such works in operation, producing 446,672 cwt. of weld iron, but the material used is as a rule only scrap-iron. The most important apparatus for the production of weld iron is still the puddling furnace. In 1878 there existed 2,301 furnaces, of which, however, only 1,533 were at work, producing in all 24,723,029 cwt. of weld iron. Out of the total production of 27,208,340 cwt. there were 3,346,803 cwt. of railway material for direct use, among which there were more than 1,000,000 cwt. of rails, and nearly 1,500,000 cwt. of sleepers; further, 11,242,762 cwt. merchant bar iron; 2,947,565 cwt. plates; 3,567,230 cwt. wire.

The tinned plate manufacture of Germany, as also its tube manufacture, are insignificant, the former producing only 171,646 cwt., and the latter 96,908 cwt. The production of cement steel, which belongs to this branch, was only 5,995 cwt. The production of weld iron is more intimately connected than that of castings with the pig-iron districts. We accordingly find the district of the Ruhr with 3,000,000 cwt. in the

governmental district of Düsseldorf, and nearly 7,000,000 cwt. in the governmental district of Arnsberg at the head, followed by Upper Silesia with 4,000,000 cwt., the district of the Saar with 2,500,000 cwt., and Lorraine with about an equal quantity.

3. *Ingot iron (Flusseisen).*—The production of Flusseisen now takes a prominent place in our iron industry. It may be safely prophesied that it will very shortly surpass that of weld iron. While originally the manufacture of Flusseisen was only known in comparatively small quantities in the crucible as cast steel, carbon steel, and ore steel, it is only since the introduction of the Bessemer and Siemens-Martin processes that its importance has been fully realized. The number of the works is small. Of 50 establishments, 18 occupy themselves exclusively with the production of ingot iron (generally as crucible cast steel), while 29 produce it in connection with other iron works. Out of 64 Bessemer converters there were 35, and of 43 reverberatory furnaces, 26 at work. There were 331 crucible furnaces, of which only 101 were in operation; a proof of the degree in which crucible smelting is being dispensed with, 9,835,252 cwt. ingot iron were produced in Bessemer converters, 1,049,522 cwt. were produced in reverberatory furnaces.

The total production of ingot iron and crucible steel together amounted to 11,406,571 cwt., of which 7,495,219 cwt. were used for rails.

In this respect the district of the Ruhr is far in advance. It produced in the governmental district of Arnsberg nearly 4,000,000 cwt. of iron wares manufactured from Flusseisen, and in the governmental district of Düsseldorf more than 4,000,000 cwt., no other district reaching 1,000,000 cwt.

NOTES.

(1) *Noric iron*, Pliny, xxxiv, 41.

(2) *Agricola*, 1546.

(3) Earliest blast furnaces in the Siegerland for the production of porous white pig and castings, beginning of sixteenth century. Blast furnace and refining works in Silesia since 1721. Extinction of blomerics in Silesia 1798, of high blomerics in Styria 1835, in Schmalkalden 1845.

(4) An insignificant consumption of coal in Germany for domestic purposes, brick and glass works, can be traced with certainty as far back as the beginning of the fourteenth century.

(5) Introduction of the steam engine into mines and iron works, 1784; first coke-blast furnace of Gleiwitz in Upper Silesia, 1796; introduction of the puddling process, 1824; invention of puddled steel, 1846.

(6) CONSTRUCTION OF THE HÜRDE WORKS AND FOUNDATION OF THE WESTPHALIAN COKE-BLAST FURNACE INDUSTRY, 1852.

Historical development of iron industry in Germany.

I. *Direct process.*—Up to the year 1500 smelting by direct process was exclusively in use, and had been carried on already in the time of the Romans in the Eifel on the Lahn, and in Styria.

Blomerics ceased in Silesia in 1798, in Schmalkalden in 1845.

II. *Blast-furnace work.*—A. Blast furnace worked with charcoal. Invented in Siegerland, 1500; introduced into Sweden, 1525; into England, 1534; into Silesia, 1721.

B. *Blast furnaces worked with coal and coke.*—First experiments in England, 1611–65. Introduction into England, 1720; into Upper Silesia at Gleiwitz (by Wedding), 1796; in Königshütte, 1802; in Hohenlohhütte (first private works), in 1805; in the district of the Saar, in 1848; in Hoehdahl, in 1849; in Hörde (by Von Hoff), in 1852; in Concordiahütte, near Aix-la-Chapelle, in 1854; in the Heinrichshütte, near Siegen (for spiegeleisen), in 1862.

C. *Hot-blast.*—Invented in England (by Neilson), in 1828 to 1834; introduced into Germany in 1835; Cowper's apparatus, 1861; apparatus with hanging tubes (Königshütte, by Wedding, Georgs-Marienhütte by Wintzer), 1868; Whitwell apparatus in 1870.

D. *Employment of the blast-furnace gases.*—Eighteen hundred and eleven, in Franco (Aubertot); 1832, in Germany (Fabre du Faur); and in England (Teague), in 1832; scientific experiments of Bunsen and Playfair, in 1838; general introduction into Germany, 1855; into England, 1865.

E. *Production en masse of pig-iron.*—By increase of the blast and the width of the hearth, 1860 in England (Aberdare), 1866 in Germany (Kurg von Nidda Furnace, in Königshütte), by lessening the interruptions, Surmann's slag tucere, 1865.

III. *Refining processes.*—Forge hearths, in 16th century, in Siegerland; 1721 in Silesia. Puddling process, invented by Cort; in England, in 1784; Roger's iron bottoms, 1818. Introduced into Germany: 1824, Rossestein; 1825, Lendersdorf; 1827, Wetter; invention of the slag bottom, in England, by Hall, in 1840; introduced into Königshütte in 1843; in Geiseric, in 1845. Invention of puddled steel (Lohage), in West-

phalia, 1846; introduced into England, 1849 (Riepe). Bessemer process invented, in England, 1855; first success in Sheffield, 1860; in Hörde, 1863; in Königshütte, 1864; in Kaiserslautern, 1868.

IV. *Ingot iron (Flusseisen).*—Crucible cast steel invented, in England, by Huntsman, 1770. Introduced into Germany: Krumm, 1810; Bochum, 1843. Ingot iron, in reverberatory furnaces, invented, in France, 1857. Introduced into Germany: Borsigwerk, 1873. Bessemer ingot iron invented, in England, 1856 (Mushet); generally introduced, together with the Bessemer refining process.

V. *Rolling works.*—Plate rolling mills: 1786, Geislauntern, for tinned plates; 1800, at Spillenberg, near Steele; 1829, at Oberhausen. Grooved cylinders: 1825, at Rossestein (for rails, 1835); 1839, in Warstein; 1843, in Hörde; 1844, in Stolberg (for wire); 1822, at Eschweiler. Compound universal rolling mill (Doelen): Hörde, 1848.

(¹) Table showing the iron production of Prussia from 1837 to 1879.

Year.	Pig-iron.	Castings, second smelting.	Malleable iron.	Ingot iron, included in No. 3.
	Tons.	Tons.	Tons.	Tons.
1837.....	99,500	6,896	74,348	35
1838.....	93,479	8,056	78,595	42
1839.....	106,347	10,612	84,914	37
1840.....	111,503	13,765	92,080	33
1841.....	108,492	16,230	97,806	47
1842.....	100,947	19,485	98,658	47
1843.....	101,009	20,080	110,750	47
1844.....	98,963	20,676	115,700	77
1845.....	109,552	37,041	146,203	94
1846.....	117,055	36,242	153,801	63
1847.....	137,898	32,247	184,631	224
1848.....	127,926	24,003	144,150	261
1849.....	117,093	22,708	126,905	521
1850.....	134,994	29,929	169,715	908
1851.....	147,790	35,544	182,884	872
1852.....	167,211	49,377	227,847	6,819
1853.....	210,934	53,181	261,608	2,218
1854.....	201,533	67,016	274,856	7,255
1855.....	301,387	85,840	317,410	8,987
1856.....	363,881	88,011	460,176	8,943
1857.....	307,274	96,195	357,462	8,800
1858.....	413,343	109,397	387,236	9,276
1859.....	396,892	74,930	347,844	9,232
1860.....	395,741	76,675	352,334	9,813
1861.....	449,339	88,031	382,305	14,795
1862.....	526,077	98,663	447,775	17,664
1863.....	636,679	129,207	489,856	23,664
1864.....	705,967	147,937	546,471	39,065
1865.....	771,903	155,752	610,382	67,667
1866.....	803,552	138,897	595,735	83,737
1867.....	987,668	164,824	680,282	88,589
1868.....	1,053,260	177,356	779,090	92,696
1869.....	1,180,579	210,544	918,178	109,753
1870.....	1,155,501	204,667	913,994	125,814
1871.....	1,297,940	251,407	1,181,074	143,805
1872.....	1,477,835	323,976	1,262,085	189,837
1873.....	1,573,902	359,229	1,270,525	247,540
1874.....	1,280,269	330,224	1,460,909	324,695
1875.....	1,398,337	329,670	1,346,395	317,764
1876.....	1,324,339	297,673	1,268,215	340,083
1877.....	1,421,667	283,071	1,255,923	391,110
1878.....	1,568,061	277,190	1,437,643	462,507
1879.....	1,639,676	304,612	1,477,116	469,096

(²) The yearly production of coal amounts to about 38,000,000 tons, compared with 136,000,000 tons in Great Britain.

In 1878, Prussia produced:

	Cwt.
In 414 collieries	710,000,000
In 501 lignite mines	28,000,000

(³) *Iron-ore production of Germany in 1878, in tons:*

Brown iron ores	3,730,660
Red iron ores	740,918
Magnetic iron ores	73
Spathose iron ores	830,198
Carboniferous iron ores	155,252

Total 5,457,101

(10) The following tables give, for the year 1878, data which differ in some respects from those shown on the graphic maps, which is explained thereby that on the maps the gross production in weld and ingot iron is shown, while the tables only give the production of finished iron (therefore exclusive of waste).

Production of iron ore in Germany in the year 1878.

	Tons.	Mines at work.	Number of workmen.
I. PRUSSIA.			
A.—Mining district, Breslau.			
Province of Silesia: Leignitz	1,848	2	8
Oppein	551,579	5	2,929
B.—District of Halle.			
Province of Saxony: Magdeburg	117	1	2
Merseburg	4	1	5
Erfurt	50,527	3	239
C.—District of Dortmund.			
Province of Hanover: Osnabrück	187,840	4	537
Province of Westphalia: Münster	15,849	3	71
Minden	545	3	7
Part of Arnaberg	209,014	3	898
Rhenish province: Düsseldorf	5,805	2	71
D.—District of Bonn.			
Province of Westphalia: Arnaberg	486,808	129	4,958
Province of Hessen-Nassau: Wiesbaden	460,868	180	3,570
Rhenish province: Coblenz	782,576	210	7,903
Cologne	6,284	11	84
Trèves	4,189	9	56
Aix-la-Chapelle	17,275	11	203
E.—District of Clausthal.			
Province of Hanover: Hildesheim	164,166	21	838
Province of Hessen-Nassau: Cassel	6,790	8	112
II. BAVARIA:			
District of Upper Bavaria	1,848	2	20
District of Upper Palatinate	83,553	12	431
District of Upper Franconia	1,075	11	40
District of Central Franconia	2,887	2	14
District of Swabia	846	6	38
III. SAXONY	10,551	36	271
IV. WÜRTTEMBERG	19,123	3	174
V. HESSEN	93,074	11	454
VI. THURINGIA	11,294	26	179
VII. BRUNSWICK	43,981	8	168
VIII. WALDBECK	8,396	6	43
IX. ALSACE-LORRAINE:			
District of Lorraine	822,360	17	1,539
Total of Germany	4,045,893	787	25,352
Luxemburg	1,411,218	85	2,393
Total of Germany and Luxemburg	5,457,101	882	27,745

Import of iron ore into Germany in 1878.

	Tons.
North Sea	551
Russia	8,827
Austria	24,035
Switzerland	
France	29,419
Belgium	1,725
Netherlands	255,976
Bremen	609
Hamburg	200
Total	321,342.1

(11) A separately-printed appendix gives further details and explanations of the maps of the iron trade in respect to the bases of these compilations.

(12) *Authorities made use of, besides the author's own works (Handbook of Iron and Steel, in 3 vols., and Sketch of the Iron Manufacture, Catalogue of the Vienna Exhibition of 1873, Class I):*

1. von Dechen. Useful Minerals and Mineralogy of the German Empire, 1873.
2. Pechar. Coal and Iron, 1878.
3. Protocols of the Iron Enquête Commission, 1878.
4. Official Statistics of Prussia and Germany.

(13) The coal measures can be traced on the surface over about 113 square kilometers, and are covered principally by Tertiary and Trias formations extending over 794 square kilometers; their total extent is probably 3,120 square kilometers (von Dechen).

(14) There exist:

	No. of seams.	Meters of coal.
In the coal measures of Nicolai	26	28.5
In upper portion of the principal basin from Zabrze to Myslowitz	36	58.6
Lower portion of the principal basin near Zabrze	12	87.7
Lower portion of the principal basin near Königshütte	7	7.0
District of Koblen and Petzkowitz	33	23.0
Total	114	154.8

The seams of the principal district, which appear dome-shaped, have an inclination 3° to 5° , increasing, however, to 20° and even 30° .

The lowest seams of the Hultschin basin are suitable both for coking and gas production; the same is the case with the coals of the Zabrze; all others are semi-bituminous or anthracite.

In the year 1878, 164,000,000 cwt. were produced by 30,000 miners, in 104 collieries.

(15) In the year 1878, 7, as compared with 27; the first with 100,000, the latter with over 5,000,000 cwt. of pig-iron.

(16) The production in 1878 was 147,410 cwt., out of 478,000 cwt. of ore.

(17) The coal measures appear on the surface of 8 square German miles, but are traced over more than 40 square miles.

(18) There are about 70 workable seams, with about as many meters of coal.

(19) The formation differs from that of Upper Silesia, showing itself in several basins in strict connection with each other, and flattened towards the points of inclination. The four principal basins contain a multitude of minor basins, with frequent faults. The operation of coal mining is, therefore, much more complicated than in Upper Silesia, and the depths are greater.

(20) In the year 1878, 382,658,935 cwt. of coals were produced by 73,895 miners, in 202 collieries.

(21) The net of lodes extends for a distance of 10 German miles. Its greatest breadth is more than 5 German miles, and it contains more than 500 lodes, many of which appear in flat-beds.

(22) These are especially the lodes of Horhausen.

(23) Mostly spiegeleisen.

(24) Mostly crystalline white pig.

(25) Prussia and Hessen.

(26) The coal measures appear on the surface over about 30 German square miles.

(27) The production of coal was—

	Cwt.
In the governmental district Trèves	88,890,238
In Bavarian Palatinate	2,744,594
In Lorraine	8,168,654

(28) In the year 1878 only 94,000 cwt. of iron ore was produced in the governmental district of Trèves.

(29) The Minette seams of Luxemburg are as follows: A black sandy seam; a gray chalky seam of 4 to 5 meters; a red chalky seam of 3 meters; and a red sandy seam of 3 meters.

(30) The production of ore was—

	Cwt.
In Lorraine	16,447,192
In Luxemburg	28,220,353

(31) The coal production amounted to 21,586,932 cwt.

(32) The production of iron ore was 395,354 cwt.

PIG-IRON MAKING IN GERMANY.

By J. SCHLINK, MÜLHEIM-ON-THE-RUHR.

[Inclosure 2 in Consul-General Lee's report.]

The author intends to give in this paper only a simple, short sketch of the basis on which pig-iron making in Germany is founded. The German Zollverein, *i. e.*, the German Empire, including the grand-duchy of Luxemburg, which is united by personal union with the kingdom of Holland but belongs to the Zollverein, raised in 1879 about 5,790,000 tons iron ore; of this quantity about 1,033,000 tons were exported and about 290,900 tons were imported. The greatest part of export consists of Minette iron ores from Luxemburg-Lorraine to Belgium and France, the import of iron ores from Spain, Algeria, and Elba for Bessemer pig-iron.

The German Zollverein produced in 1879:

	Tons.
Foundry pig-iron.....	128,653
Bessemer pig-iron.....	465,600
Forge pig-iron.....	1,508,688
Castings of first smelting.....	22,200
Scrap pig-iron.....	8,867
	<hr/> 2,134,008

and imported 392,318 tons, exported 428,000 tons of pig-iron. The production is nearly 2.7 per cent. greater, as stated above, because several works have given no statistical returns. The imports consist chiefly of Scotch and Cleveland foundry pig and of Cumberland Bessemer pig-iron.

The German pig-iron industry embraces three large districts, (1) the Rhenish-Westphalian, (2) the Luxemburg-Lorraine, and (3) the Upper Silesian district.

This division is not quite correct, because several important iron works are situated outside the above-named territories; for example, the George-Marienhütte, near Osnabrück, and the Ilsederhütte at Peine, both in the late Kingdom of Hanover; the König-Marienhütte at Zwickau, in Saxony; the Maximilianshütte, near Regensburg, in Bavaria.

The Rhenish-Westphalian coal-mining district is composed by the districts of the Saar, Inde, and Ruhr, and delivers the coal not only to the iron-works within their districts, but also to the works in Hanover, in the Harz, and to a great extent also to Luxemburg-Lorraine, Saxony, and Bavaria. The iron industry of Upper Silesia uses only Silesian coal. In the Ruhr basin are raised yearly over 20,000,000 tons of coal, about one-fourteenth of the production of the whole world. There are excellent qualities of coking coal in Rhineland-Westphalia. The coal is almost everywhere disintegrated and dressed. The better qualities of coke contain seldom over 8 per cent. of residue, are hard, and well-adapted for heavy charges in the blast furnace. The new coke ovens are chiefly of the Coppée system, with a capacity of about 5 tons of coal and more, a coking time of 24 to 48 hours, and a net produce of about 70 per cent. of coke.

The Saar and partly the Zwickau district in Saxony raise coking coal of a fair quality, while the Silesian works have to struggle with difficulties arising from the bad coking qualities of the Silesian coal.

Nearly all iron-works in the neighborhood of coal mines have their own coke ovens and use the escaping gases to heat the boilers, but the greatest part of iron-works situated at a greater distance prefers to buy the coke from the owners of coke ovens in the coal-mining district.

1. *The Rhenish-Westphalian district.*—The Rhenish-Westphalian blast furnaces produce ferro manganese, speigeleisen, and manganiferous puddling iron, Bessemer and foundry pig-iron, but not much ordinary white forge pig-iron. The conditions of commercial success are based upon the raising of excellent iron ores, the facility of importing foreign iron ores, especially for Bessemer pig, and the manufacture of high-quality pig. The mining-inspection district (Oberbergamtsbezirk) of Dortmund, embracing Westphalia and some of the surrounding territories, raised in the year 1879 about 437,300 tons of iron ores, chiefly consisting of red and brown iron ores and black-band; but the mining-inspection district of Bonn, embracing Rhenish-Prussia and the late duchy of Nassau, raised about 1,803,000 tons—that is, 58 per cent. of the production of Prussia and 53.6 per cent. of that of Germany, not including the production of Alsace-Lorraine and Luxemburg. The production of pig-iron in both above-named mining-inspection districts was, 1879, about 1,200,000 tons—that is, more than 73 per cent. of the production of Germany, not including the production of Alsace-Lorraine and Luxemburg.

The territories of the rivers Lahn and Sieg in Rhenish-Prussia and Nassau are distinguished not only by the large quantities of iron ores brought to the surface, but

even more by the excellent qualities of the ores. Iron making is very old in these countries, as all conditions for it were abundantly given—the ores by the mountains, the charcoal by the large forests, and the motive power by innumerable small, quick flowing rivers. In conformity to the customs of that age, the iron makers established a guild, which still existed in the first half of this century. The first correct accounts bear the date of the middle of the fifteenth century. On the 22d of July, 1443, was issued the oldest known “territorial ordinance” concerning the management of iron-works. In the year 1478, Count John of Nassau, an ancestor of the great King William III, of England, and Count Eberhard, at Sayn, concluded a treaty stipulating that the subjects of both counties should be compelled by an oath and by threat of losing their lives, not to spread the knowledge of smelting iron ores out of the counties of Nassau and Sayn. The small blast furnace at Hainerhütte, near Siegen, existed already in the year 1492. In the beginning of this century the blast furnaces were 18 to 20 feet high, formed on the bottom a square of $2\frac{1}{2}$ by $2\frac{1}{2}$ feet, then increasing to 6 to 7 feet in the middle, and ending on the top in a square hole of about 30 inches. The blast-engine consisted of two bellows, 14 feet long and $2\frac{1}{2}$ respectively, $1\frac{1}{2}$ feet broad, made of poplar wood and ox leather, driven by water-wheels. In 24 hours were consumed 10 to 12 tons iron ore with $3\frac{1}{2}$ cart-loads charcoal, and produced 3 to 4½ tons of pig-iron.

In the Siegen district the spathic iron ores and the brown manganiferous iron ores are prominent; in Nassau also the latter and the red hematites, mostly with a high yield of iron and a moderate amount of phosphorus.

It would be impossible to give the correct average contents of the different qualities of ores, but the following analyses may be considered to represent fair specimens:

1. Spathic iron ore of Wissen, not calcined: SiO_2 5.8 per cent., Al_2O_3 1.7 per cent., Mn 7.4 per cent., Fe 35.2 per cent., CaO 0.7 per cent., Mg 0.7 per cent., Cu 0.125 per cent., P trace.

2. Brown manganese iron ore of F. Krupp: Fe 42.9 per cent., Mn 12.58 per cent., CaO 1.39, MgO 0.43 per cent., SiO_2 5.87 per cent., Al_2O_3 3.30 per cent., P 0.006 per cent.

3. Manganese brown iron ore of Mr. Fernie, at Giessen: Fe 25 to 28 per cent., Mn 18 to 19 per cent., S 0.08 per cent., P 0.14 per cent., SiO_2 14 per cent., Al_2O_3 6 to 8.66 per cent., MgO 0.9 per cent.

4. Red hematite iron ore of the government mine “Beilstein,” near Dillenburg: Fe 49.60 per cent., Mn 0.25 per cent., SiO_2 15.50 per cent., Al_2O_3 9.10 per cent., CaO 3.91 per cent., MgO 0.53 per cent., P 0.326 per cent.

The variety of these ores is very great, as a study of the exhibition at Düsseldorf shows. The collective display of the Siegen district and of the Nassau district deserve special attention.

The iron ores are partly smelted in the immediate neighborhood, partly sent to the more remote situated iron-works of Rhineland, Westphalia. The spathic and manganese brown iron ores serve chiefly for the production of spiegeleisen and white manganiferous pig. I may mention here some mixtures of ores to produce spiegeleisen: 50 per cent. calcined spathic iron ore, 20 per cent. brown iron ore with a high yield of manganese, 30 per cent. red or brown iron ore with a small amount of manganese, all iron ores with as little phosphorus as possible. Such a spiegeleisen must contain 11 to 12 per cent. Mn, 5 per cent. C, not more than 0.05 per cent. P, 0.05 per cent. Si. Hörde Iron Works use for spiegeleisen with 10 to 13 per cent. Mn, 60 per cent. calcined spathic iron ore from Siegen, 20 per cent. brown iron ore with a large percentage of manganese from Nassau, 10 per cent. sphaerosiderit from the same district, and 10 per cent. red iron ore from Spain (Somorostro). The slag contains 8.4 MnO.

Several years ago some of the Rhenish-Westphalian iron-works commenced successfully to produce ferro-manganese in blast furnaces, which alloy is sold in trade with a percentage of 30 to 80 per cent. of manganese. The greatest care must be observed by the selection of raw materials; when ferro-manganese with a high percentage is to be produced, an addition of pure manganese ore (pyrolusite) is necessary to a large extent. Manganese has the peculiarity to be reduced with difficulty and it has a strong tendency to reoxidize. The slag contains always 8 to 14 per cent. Mn, sometimes 20 per cent. metallic manganese as protoxide, and the escaping gases of blast furnaces contain also considerable quantities of sesquioxides of manganese, formed before the blast tuyeres. Blast furnaces producing ferro-manganese can be easily recognized by the escaping smoke. The smoke of blast furnaces producing pig-iron is white, or at least nearly white, but the smoke of blast furnaces producing ferro-manganese has decided yellow-brown color. Boilers and hot-blast stoves, wherein the gases burn, incrustate soon and thickly with a spongy brown substance. Another peculiarity of these gases is the very rapid destruction of the wrought-iron parts at the apparatus employed for taking away the blast-furnace gases. Not without interest are the diverse forms of crystallization of the ferro-manganese. When a percentage of 9 to 12 per cent. of manganese makes the spiegeleisen highly specular, these specular faces diminish with the increasing percentage of manganese, and disappear almost at a percentage of 30 per cent. Very peculiar are the splendid annealing

colors, which show themselves with all colors of the rainbow at a percentage of 40 to 60 per cent. manganese. The iron and steel works of Gutehoffnungshütte, at Oberhausen, and of the Phoenix, at Ruhrort, have exhibited at Düsseldorf fine specimens of ferro-manganese.

There has been so far a great difficulty to procure the necessary ores for the production of ferro-manganese. The ores from the Lahn contain too much iron, and in many instances too much phosphorus. For ferro-manganese below 50 per cent. of manganese, 30 to 35 per cent. of inland ores can be used, but for high-class ferro-manganese, from 50 per cent. upward, not more than 15 to 20 per cent. of the inland ores can be employed. Hörde Iron Works used for ferro-manganese with 70 per cent. Mn a mixture of 80 per cent. manganese ore from Canada and 20 per cent. from Nassau; for ferro-manganese with 50 per cent. Mn a mixture of 50 per cent. Cartagena (Spain) manganese ore and 50 per cent. from Nassau. The alloy contained Si 0.05 per cent., P 0.12 to 0.15 per cent., C (combined) in the first instance 7 per cent., in the second 5.5 per cent.; the slag contained 8.34 to 10.76 per cent. Mn. The FeMn specimens exhibited by the Gutehoffnungshütte at Düsseldorf contain C 5 per cent., Si 0.2 per cent., P 0.15 per cent., Cu 0.02 per cent.

The foreign manganese ores are procured from all parts of the world—from Spain, Portugal, the Caucasus, Canada, New Zealand, &c. There are exhibited by the above-named iron-works, amongst others, manganese ores from Huelva (Spain) with 47 per cent., a Portuguese ore with 45 per cent., an ore from New Zealand with 56 per cent., from Canada with 53 per cent., a Swedish ore (Hausmannite) with 50 per cent. Mn, German ores with 28 per cent. Mn and 22 per cent. Fe. The high price of the ores, the large amount of coke and limestone used, the small output, and the rapid wearing of the blast furnaces will always necessitate a high price of ferro-manganese.

The spiegeleisen and ferro-manganese are exported in considerable quantities. The large amount of manganiferous white pig-iron produced by the Rhenish-Westphalian blast furnaces, and containing 4 to 5 per cent. Mn, 3 to 4.5 per cent. C, P not over 0.5 to 0.6 per cent., is puddled with more or less ordinary white forge-pig, and its productions are the well-known good qualities of Rhenish-Westphalian boiler-plates, sheets, wire, merchant bar-iron, &c. We have already mentioned that production of ordinary forge-pig is comparatively small in Rhineland, Westphalia. The greatest part of that pig is produced in Luxemburg-Lorraine and at the Ilsederhütte, near Peine. The mixture of iron ores for ordinary white forge-pig, which is produced here, contains more reheating furnace slag, blackband, bog iron ore, &c., than if manganiferous white pig is produced, and avoids the costly spathic and manganiferous brown iron ores.

Although the Ilsede Works are situated in the province of Hanover, they gravitate toward the Westphalian district, as they draw their supply of coal and find the customers for their cheap white forge-pig, rich in phosphorus, almost exclusively there. The brown oxides of iron, partly calcareous, partly clayish ores, are found near the works in large deposits, 23 to 33 feet in thickness, of an average good quality, and are raised partly in open air, partly in underground workings. A visitor, competent to judge in these matters, describes the deposits as follows: "The people have no ore mines, but ore quarries, which supply them iron ore and limestone just in proper proportions; the mixture for the blast furnace is already supplied by nature, and everything tends to insure a cheap produce of pig." As already related, these ores contain a high percentage of phosphorus, as frequently deposits of coprolites are found mixed up with the ore, sometimes in such large quantities that in the neighborhood of Peine artificial manure works have been erected. There are three different qualities of ore: 1, calcareous lump ore; 2, ore produced by dressing process; 3, small clayish ores. The mixture in the blast furnaces contains about 42 per cent. of ore No. 1; 23 per cent. of No. 2; 26 per cent. of No. 3; and 9 per cent. of slag from reheating furnaces. An addition of limestone is not necessary. The ores contain:

	1. Clayish ores.	2. Calcareous ores.
	Per cent.	Per cent.
Fe.....	36.85	27.65
Mn.....	3.80	4.23
Al ₂ O ₃	5.23	0.89
CaO.....	3.36	9.64
MgO.....	0.36	.....
P.....	1.69	0.96
SiO ₂	8.64	5.22

The works possess three blast furnaces and 60 coke ovens, but as a rule only two blast furnaces are in blast. One of the blast furnaces now in working has a cubic space of 7,205 cubic feet; the second of 10,949 cubic feet; the first furnace produced in

1879, with an average yield of 36.8 per cent. and a consumption of coke equal to 18.3 cwt. per ton of pig, 765 tons of pig per week, and the second, 692 tons per week, with an average yield of 36.1 per cent. and a consumption of coke equal to 19.76 cwt. per ton of pig. In the month of June the average output was 832 tons and 715 tons respectively per week. There are two different qualities of pig produced:

	Manganiferous pig.	White forge- pig.
	<i>Per cent.</i>	<i>Per cent.</i>
Si	0.11	0.03
Mn	3.84	1.68
P	3.29	3.12
S	0.04	0.16
C	2.68	1.64

The large outputs and the very low price of the ores make the undertaking a very profitable one. Very likely will the Ilsede pig play an important part in the dephosphorizing process of Messrs. Thomas and Gilchrist.

Bessemer pig entirely of native ores is produced only by two German works, the Georgs-Marienhütte, near Osnabrück, in Hanover, and the Maximilianshütte, near Regensburg, in Bavaria. The Rhenish-Westphalian works, viz, the Gutehoffnungshütte, the Phoenix, the Union at Dortmund, the Bochum and Hörde Company, Friedr. Krupp, Schalker Verein, &c., use large quantities of foreign ores for the production of Bessemer pig, chiefly from Spain, Algeria, and the island of Elba. The Hörde works employ for the manufacture of Bessemer pig, afterwards converted into rails, 40 per cent. calcined spathic ore, 25 per cent. brown oxides of iron from Schwelm, 30 per cent. Somorostro (Spain) or Mokta (Algeria), and 5 per cent. burnt pyrites, but for pig, rich in silicon, meant to substitute the Cumberland pig, 5 per cent. calcined spathic ores, 65 per cent. Somorostro, 30 per cent. brown oxides of iron from Schwelm. The pig contains:

	I.	II.
	<i>Per cent.</i>	<i>Per cent.</i>
Si	2.2	3.2—3.8
P	0.08	0.05—0.06
Mn	6.7	1.5—2.2
C (Graphite)	3.20	3.2
C (combined)	1.10	0.2
S	0.02	0.2

The brown oxides of iron from the mines near Schwelm, in Westphalia, are of great importance for the production of Bessemer pig to the works in the neighborhood. They contain on an average, Fe 36.68 per cent., Mn 0.38 per cent. Al_2O_3 9.55 per cent., CaO 0.56 per cent., MgO 0.74 per cent., P 0.0382 per cent., S 0.170 per cent., SiO_2 22.23 per cent. The raising of the ores takes place in an enormous open-air working, and the output of 1879 reached the large figure of 80,700 tons of iron ore and 30,500 tons of pyrites. The pyrites as well are of some importance to the iron-works, as they are used after complete calcination for the produce of Bessemer pig, for which they are especially adapted, owing to the absence of phosphorus.

The Georgs-Marienhütte near Osnabrück, is situated likewise in Hanover, but gravitates in the same manner as the Ilsederhütte towards Westphalia. The works possess 6 blast furnaces, producing partly white forge-pig of a superior quality, partly Bessemer pig of ores found in the neighborhood. In former years about 80 to 88 per cent. of the whole produce consisted of Bessemer pig, but lately the proportion of white forge-pig has increased considerably, as most of the German steel-works commenced making their own Bessemer pig. The mines are situated close to the works, and the ores are found in the Permian formation. They are brown oxides of iron and spathic ore, the former being decomposed spars. In the same deposits, mixed with the ores, are found the limestones, used as flux, still containing 15 per cent. of iron. The yield of these ores is very small, seldom exceeding 22 to 23 per cent. in the mixture, but the cost of raising them is very low. The percentage of phosphorus in the pig is somewhat above that of the Cumberland brands and amounts to 0.06 to 0.09 per cent. The pig is nevertheless employed readily in the steel-works, as silicon and manganese are in a very favorable proportion to each other and allow the pig to be used alone or in combination with other brands. The Georgs-Marienhütte was the first firm in Ger-

many which proved, by actual working, that a veritable Bessemer pig could be produced in Germany, and has become a pioneer in this branch of the iron trade.

We pass now to the Maximilianshütte, near Regensburg, in Bavaria, which, owing to their geographical position, cannot be brought to comparison with the other German works. The above-named firm possess two blast furnace works; one, the elder one, at Rosenburg, in Bavaria, where from ores of the neighborhood foundry and forge-pig of first-rate quality is produced; and a second one, the new works at Unterwellenborn, in Thuringia, connected with a Bessemer plant. The ores for the Thuringia works are raised close to the works at Kamsdorf and Küniz, in the Permian formation. There are two very large deposits, sometimes 66½ to 82 feet in thickness, and consisting of a peculiar fine-grained spathic ore, formed by the decomposition of regular spars. The upper deposit contains manganiferous ores, used for the manufacture of spiegeleisen, with 10 to 12 per cent. manganese, whereas the lower deposit is chiefly used for Bessemer pig. The ores are almost entirely devoid of phosphorus, and the Bessemer pig contains only 0.03 to 0.06 per cent. phosphorus. At the outcrops of the deposits the flux is found, a limestone containing 14 to 20 per cent. Fe and 3 to 5 per cent. Mn without phosphorus. The following may be considered as fair specimens of the ores: 1. Spar from Kamsdorf. 2. Brown oxides of iron from Kamsdorf. 3. Red hematite from Ilmenau.

	I.	II.	III.
	Per cent.	Per cent.	Per cent.
Fe	89.40	48.98	54.58
Mn	3.10	4.25	trace.
CaO	4.68	3.28	8.40
MgO	1.24	0.86	trace.
Al ₂ O ₃	0.02	2.41	trace.
SiO ₂	3.52	8.46	10.212
P	0.016	0.025	0.034
BaO, SO ₂	0.016	0.025	2.10

The Bessemer pig from the blast furnace is carried straight to the Bessemer converters, without remelting in the cupola, but the greater part of the pig is sold. The works at Unterwellenborn possess two blast furnaces, about 64 feet high, with a weekly output of 350 to 490 tons, sometimes even 560 tons in each furnace. The total produce of pig by this company during 1879 amounts to 63,500 tons. The financial position of this firm is almost without comparison. The capital is 150,000 livre-st.; the amortisation from 1856 till 1878 reached the sum of 465,000 livre-st., and in the balance sheet of 1879 the whole property is set down at 15e.

The output of foundry pig in Germany is, comparatively speaking, of small importance, as it scarcely surpasses 6 per cent. of the total produce. The large import of pig into Germany (Holland) consists of about half foundry and half Bessemer pig. The foundry pig is produced of red and brown hematites, burnt blackband, sometimes mixed with bog ore from Holland and Belgium. The following is an analysis of the foundry pig from Gutehoffnungshütte: Si 2.45 per cent., P 0.977 per cent., S 0.011 per cent., graphite 3.28 per cent., C (combined) 0.26 per cent., Cu 0.06 per cent., Mn 0.18 per cent., Fe 92.4 per cent.

As a consequence of the intimate acquaintance with the Scotch foundry pig, the German foundries had a certain prejudice against the use of German foundry pig, and denied that its value was equal to that of the Scotch works. Six of the most important German firms initiated therefore under control of government a series of comparative trials of foreign and home-made pig. The trials extended as well to the chemical constitution of the pig as to the relative and absolute strength, and its use in the different sort of castings; and to obtain reliable results these inquiries were made over a long period, and with a great many different samples. The results are published under the title: "Vergleichende Qualitätsuntersuchungen Rheinisch-Westfälischen und ausländischen Gießerei-Roheisens. Auf Anordnung des Königl. Preussischen Handelsministerium aufgestellt von R. Wachler, Königlichem Hütten-Inspector zu Gleiwitz." The trials showed that the quality of the German foundry pig was in no way inferior to that of the Scotch works. The analysis showed that, as a rule, the Scotch brands contained a larger percentage of silicon, but since then the discrepancy has disappeared.

We do not hesitate to say that the more modern English blast furnace works, especially those of Middlesbrough, have served us in many respects as models. The author of this paper has already, 15 years ago, at a technical meeting, given a description of the rapidly increasing growth of the iron trade of the North of England, and he added to this a special description of some of the more important works as models for imitation. The blast furnaces in Germany never exceed the following dimensions: 6½ to 8½ feet in the hearth, 19½ to 23 feet in the boshes, 16½ feet on the furnace top, 65 to 66

feet high, and 14,000 to 14,500 cubic feet of space, dimensions smaller than those occasionally found in England, but nevertheless some high outputs are realized. We mentioned already the high production of the Ilseoderhütte; the works at Schalke produce regularly per week 700 to 790 tons forge-iron of good quality. In Bessemer pig Bochum shows a high figure, and the Freidrich-Wilhelmshütte, at Mühlheim, had a weekly output of foundry pig of 450 tons, chiefly No. 1, with a yield of only 29 per cent. of iron in the mixture of ores and limestone.

Whitwell hot-blast stoves are very commonly used in Rhineland and Westphalia; more than 44 have been constructed in this district. During the last few years there has been a tendency to raise the height of the stove considerably; the Bonchum works raised in the last time the height of their stoves from 44 to 45 feet, and the Freidrich-Wilhelmshütte has commenced to follow, as the results are very favorable.

Although the German works are endeavoring to adopt all modern improvements, there is nothing remarkable in the arrangements; and most of the gentlemen present will have an opportunity to judge by personal experience what we are doing in this country.

II. *Luxemburg-Lorraine.*—The same position which the Cleveland district occupies in England holds in Central Europe the Minette district of Luxemburg and Lorraine, with its branches in France and Belgium. The great rise of the iron industry in both these two countries dates from the years 1860 to 1865. The output of pig in the territories of the Duchy of Luxemburg rose within ten years, from 1866 to 1877, 400 per cent. In 1879 Alsace-Lorraine produced 830,700 tons, Luxemburg 1,617,300 tons, of iron ore, and the production of pig in these countries was as follows: Alsace-Lorraine 197,830 tons, Luxemburg 263,000 tons. The discovery of very large deposits of brown oxides of iron (Minette), which are found in the Jurassic formation, has been the origin of this rapid rise. The workable thickness of these strata and the composition of the ores vary considerably. The ore is deposited in several seams, separated by valueless beds of limestone, clay, and gravel. According to the position of these seams the ores are either of a siliceous, clayish, or calcareous nature, with a great variety of colors, red, brown, gray, yellow, and green. The thickness of the ore seams sometimes amounts to from 81 to 98 feet. In German Lorraine the deposits are the most important in the neighborhood of Oettingen (Ottange), where the total workable thickness of the seams amounts to 33 feet. In Esch a. A. (Luxemburg) the seams follow each other in the below-described manner: 3 feet 3 inches to 9 feet 10 inches of soil; 36 to 42½ feet strata of limestone, marl, and red Minette; 6½ to 16½ feet of red Minette; 39½ feet limestone and marl, with 6½ to 19½ feet of yellow Minette; 6½ feet calcareous marl; 6½ to 16½ feet gray Minette; 3½ to 6½ feet limestone; 65 feet of superlias sandstone and below the bituminous slate. The raising of the ores near outcrop takes place in open quarries and below the plateau in underground workings, generally through adits, seldom through shafts. According to the different position of the ores the nature of them varies considerably. The amount of iron seldom exceeds 40 per cent., and sinks as low as 25 per cent., where its usefulness for the blast furnaces ceases. In consequence of its calcareous character and its other chemical and physical properties, the ores are very easily reduced and the iron takes up carbon readily, but owing to the large amount of moldered vegetabilia, contains a high percentage of phosphorus. Although some hundreds of analyses are at my disposal, I find it impossible to give you concise average figures, so very variable is the composition of the ores. For instance, in a list of 155 analyses of Minette found in Lorraine, the percentage of phosphorus varies from 0.035 to 1.96 per cent. A first-rate red Minette of Oettingen (Ottange) in Lorraine contained:

	I.	II.
	Per cent.	Per cent.
Fe	40.63	39.96
SiO ₂	6.10	7.80
Al ₂ O ₃	10.76	12.04
CaO	7.80	7.61
MgO	0.46	0.15
P	0.84	0.91

Good gray Minette also from Oettingen contained:

	I.	II.
	Per cent.	Per cent.
Fe	35.9	34.91
SiO ₂	6.30	7.70
Al ₂ O ₃	8.10	11.80
CaO	16.04	16.95
MgO	0.76	0.78
P		0.67

The above analyses represent the better qualities of ores, especially those for export. Most of the blast furnaces situated near the mines use ores of an inferior character. It is natural that in the first years chiefly those ores were raised which could be cheaply procured by open-air works. The deposits are so enormous and the extension of the ore-welding strata is so considerable that an increased produce of the mines and the works is not only possible, but highly probable. In Lorraine there were up to the year 1878 not less than 183 ore concessions of Minette leased, of which only 9 ore concessions were actually worked. Of the above-mentioned concessions 27, with a superficial area of 12,856 acres, belong to the Rhenish-Westphalian works, and 28, with a superficial area of 13,489 acres, to the district of the Upper Rhine. If there is a last- ing improvement in trade many of these mines will be put in work.

The ores from these mines are only partly smelted in the district; large quantities are exported to Belgium, France, and to the Rhenish district in the neighborhood. The large exports of iron ores, shown in the statistical returns of the German Empire, consist almost entirely of those ores. The proportion of ore to pig is as 5.3 to 1, a proof of the large export.

Almost the whole of the pig produced in Luxemburg and Lorraine is common white forge-iron; only 7 per cent. are represented by foundry iron. Remarkable are the high percentages of phosphorus and sulphur in this iron. The following are the average contents of four analyses of white forge-pig from Luxemburg, bought by a Rhenish rolling-mill work:

	I.	II.	III.	IV.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
Si	0.15	0.23	0.005	0.27
P	2.05	1.84	2.34	2.14
S	0.354	0.44	0.495	0.46
C	2.5	2.75	2.15	2.87

The high amount of sulphur is due to the small quantity of basic flux. If the addition of limestone is increased the pig-iron shows a remarkable tendency to become gray; in consequence of this are the Luxemburg-Lorraine works all working with a black slag, containing a comparatively large quantity of protoxide of iron, because other bases are wanting. If foundry pig is produced the sulphur of course will disappear, owing to the increased addition of limestone. Foundry pig No. 1 of Hayange (de Wendel) contained: Si 3.12 per cent., P 1.87 per cent., S trace, graphite 3.06 per cent., C (combined) 0.11 per cent., Mn 0.63 per cent., Cu 0.06, Fe 91.20.

In many instances the ores of the various strata are mixed to avoid the addition of limestone; at some furnaces, where the ores contain too much silicon, an addition of limestone is required, which is, however, found in immediate proximity to the ores. At Hayange iron ores of 36 per cent. are mixed with ores of 18 per cent., which are very calcareous; the output is 33 per cent. of the mixture.

There are at present in Lorraine 28 and in Luxemburg 21 blast furnaces. As a rule the furnaces are situated near the mines and main lines of the railroads; sometimes, as at Ars s. M., the furnaces are placed on the slopes where the ores are raised, so that the latter are transported immediately to the top of the furnaces.

The most important proprietors in Lorraine are Messrs. les petits fils de François de Wendel, who own four furnaces at Moyeuve, eight at Hayange, including one charcoal furnace, and four at Styringen. The latter four are not working at present, and will be demolished. The above works were visited by the Institute during the stay at Paris, 1878, and were then minutely described.

A similar position to that occupied by Messrs. Wendel, in Lorraine, Messrs. Metz & Co. have in Luxemburg. The works are situated at Esch, s. A., Dommeldingen, and Eich. The ore concessions have a superficial area of 510 acres; the mines which are worked at present produce annually 302,200 tons, the five blast furnaces which are working, of a total of eight, produce about 2,000 tons per week or 100,000 per year; that is 40 per cent. of the whole Luxemburg produce. They manufacture gray foundry, spotted, white, and manganiferous pig, the latter with an addition of manganiferous ores. Luxemburg and Lorraine obtain their supply of coke from Belgium, the Saar, and the Ruhr basin. Lately the Ruhr district has taken the lead, and furnishes by far the largest quantity.

The highest output of the Luxemburg works have the 2 blast furnaces of the "Société anonyme des hauts fourneaux d'Esch sur Alzette." The dimensions of the furnaces are as follows: hearth, 64 feet; boshes, 23 feet; top, 18 feet diam.; high, 65½ feet. The weekly produce of each furnace amounts to 700 to 800 tons.

Of the pig produced in Lorraine, a considerable quantity is used in the country for bar iron, wire rods, plates, beams, railway sleepers, but in the Luxemburg district no puddling works of importance exist. The large export of Luxemburg and Lorraine is

chiefly directed to France, Belgium, and, before all, to the German works in the neighborhood, and in the district of the Lower Rhine.

If the trials of dephosphorizing the Minette pig by the Thomas-Gilchrist process should prove successful, the district would gain an increased importance for the German iron industry.

III. *The Upper Silesian district.*—Whenever the Silesian iron industry is of great importance to the eastern part of Germany, we may still pass over it here in some hurry, as the meeting is brought in contact chiefly with the western part of Germany, and we are restrained to giving only some hints.

In the province of Silesia were raised, during 1879, 11,020,656 tons of coal, and 625,000 tons of iron ores; 29 blast furnaces out of existing 55 produced 283,621 tons of pig (excluding 2 charcoal furnaces with 867 tons produce). The furnaces consumed 755,220 tons of brown oxides of iron, 21,427 tons of clayish ores, 12,440 tons of red hematites, 38,040 tons of Hungarian spars, 2,834 tons magnetic ores and blackband, lastly, 121,260 tons of reheating and puddling slag.

The Upper Silesian brown oxides of iron, chiefly of a clayish nature, are found in large but irregular deposits; lumpy ores are scarce. On an average these ores contain 20 to 30 per cent. of humidity, and from 20 to 30 per cent. of iron. The ores contain manganese, and the gangue consists of quartz and clay. The percentage of phosphorus is 0.2 to 0.3 per cent., sometimes even less, so that some qualities might be used for the production of Bessemer pig. Sulphur is found only in traces and combined with lead. Calamine and galena are frequently found in the iron-ore deposits in such quantities that the blast-furnace process is seriously interfered with, and that some furnaces produce occasionally lead in large quantities, up to 120 cwt. in one month. The iron ores are very silicious, and require a large addition of limestone.

The following are some analyses of the Silesian ores:

	I.	II.	III.	IV.	V.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
FeO ₂	48.42	50.43	49.06	49.91	56.74
Al ₂ O ₃	7.09	7.80	5.88	4.87	4.38
CaO	0.88	1.02	1.18	1.00	2.78
MnO	3.52	4.52	7.23	6.20	2.53
			MnO, Mn ₂ O ₃		
			1.80		
ZnO	1.91	2.21			
PbO	0.40	0.11			
MgO	0.62	0.50	0.34	0.39	2.13
SiO ₂	27.15	25.47	21.29	25.23	16.46
PO ₂	0.55	0.77	0.63	0.27	0.58
Glühverlust (glowing loss)	11.46	8.10	13.01	10.78	12.67

No. I and II brown hematite from Tarnowitz, No. III from Trockenberg, No. IV from Naklo, No. V from Lazarowka.

The Silesian pig is chiefly fine-grained gray or white forge-iron, and is used principally for bar iron and plates of smaller dimensions. The government works at Gleiwitz produced, out of $\frac{1}{2}$ Upper Silesian brown hematites, $\frac{1}{2}$ spathic ores from Hungary, and $\frac{1}{2}$ of reheating and puddling slag, white forge-pig (see analysis I a, b), spiegeleisen (II a, b), and with some alterations in the mixture fine-grained gray pig (III a, b), and foundry pig, (IV a, b).

	C.		Si.	Mn.	Cu.	P.	S.
	Chem. geb. combined.	Graphit. graphite.					
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
I a	2.52	0.62	0.80	2.98	0.074	1.55	0.021
b	2.37	0.78	0.26	3.02	0.044	1.48	0.017
II a	2.62	0.83	0.78	9.96	0.114	1.60	0.030
b	2.90	0.87	0.30	4.58	0.018	1.77	0.019
III a	1.06	2.46	1.66	2.82	0.081	0.31	0.032
b	0.98	2.23	2.17	3.02	0.090	0.43	0.021
IV a	1.03	2.80	1.09	3.02	0.044	0.39	0.035
b	0.77	2.41	2.99	3.22		0.46	0.018

The produce of foundry pig in Silesia is only small, hardly 5 per cent. of the whole produce of pig.

The blast furnaces have an average height of 46 to 55 $\frac{1}{2}$ feet; the output is, accord-

ing to the low yield of the ore, comparatively small, seldom exceeding 300 tons per week. The quantity of coke used varies between 24 and 32 cwt. per ton of pig. As already mentioned before has the Silesian coal only little coking qualities and furnishes coke of a soft character, which makes in connection with the clayish nature of the ores the smelting process in the blast furnaces very difficult. A great deal of attention is naturally paid to these shortcomings, and there is a well founded hope that through careful dressing of the coal and through improvements of the ovens, the quality of the coke may be materially improved.

It may be remarked here that, by the initiative of the Prussian Government, the first blast furnace worked with coke was built at Gleiwitz in Upper Silesia in the year 1796.

THE COAL INDUSTRY OF THE LOWER RHINE AND OF WESTPHALIA.

BY DR. GUSTAV NATOPF,

General Secretary of the Society for the Mining Industries of Dortmund.

With a view of placing before our respected English guests a general sketch of that industrial district which they will traverse with us in various directions in the next few days, the committee of those iron and steel works from whom the invitation has proceeded has requested me to draw up for your guidance a statement respecting this branch of our industry, which, together with our iron manufacture, is the most important factor in the industrial activity of this district, and whose product forms the indispensable basis for the manufacture and manipulation of iron.

While complying gladly with their request, I am obliged, in consequence of the short space of time at my disposal, to confine myself to the most indispensable particulars. To those among our respected guests who belong to or are connected with mining industry opportunities will be afforded in visiting those collieries, which form an object of the various excursions, of making themselves fully acquainted with every particular in connection with the coal-mining industry on the Lower Rhine and in Westphalia. The coal basin of the above district, the most abundant of the continent, which is also called after the river which runs through its southern part, the basin of the Ruhr, and in which the iron industry of the Lower Rhine and Westphalia is also concentrated, extends from the towns of Duisburg and Ruhrort on the Rhine in an easterly direction for about 70 kilometers in length and 20 kilometers in breadth. Within this comparatively narrow space of barely 30 German square miles (650 English square miles) there are now produced yearly more than 20,000,000 tons of coal, of which about 60 per cent. are consumed in the district, the remainder being exported over its borders. The Westphalian district therefore participates with 55 per cent. in the total production of the Prussian state, which amounted in the year 1878 to 35,500,000 tons. The Prussian state itself produced 89 per cent. of all the coal in the German Empire. The enormous production expressed in above figures is the result of the development which has taken place in the Rhenish-Westphalian coal district within the last two, or at most three, decades. It is true that coal-mining in Westphalia is of very ancient date; the earliest accounts which are found of it in deeds and old chronicles, though they do not extend as far into the past as those relating to English coal-mining, still prove that in the beginning of the fourteenth century this industry was in existence in the neighborhood of the towns of Dortmund and Essen. It also suffered severely with the whole German nation by the terrible thirty years' war, and it is only in the last decades of the previous century that we can trace a new impulse toward its development. Still, even in the year 1814, in which the numerous immediate territories which had till then formed part of the district in question were united in the Prussian monarchy, coal production had only reached the modest quantity of 500,000 tons.

It was only with the introduction of steam-power into manufacturing industry that coal-mining in Westphalia began to assume its present great dimensions. It would to-day be impossible to conceive either the production or the transport and sale of this most important mineral product without the employment of machine-power. It is in consequence thereof that the yearly production has risen since 1850 from 2,000,000 to 20,000,000 tons, and has therefore decupled itself in the course of the last thirty years. In the year 1860 the production of the basin was 4,490,066 tons. In the year 1870 it was 11,570,566 tons, and in the present year it will probably reach 22,500,000 tons. This great development, in which the coal-mining industry has kept pace since the year 1850 with the iron and several other branches of manufacture, has given an entirely new aspect to the face of the country. The principal towns, Essen, Bochum, Dortmund, until then small country towns of a few thousand inhabitants, have now grown to be great centers of industry, and formerly insignificant villages, such as

Oberhausen, Gelsenkirchen, Schalke, and Hörde, are now the seat of the most important manufacturing industries.

As to the stratification of the coal in the Westphalian basin, the number of seams hitherto opened up is very large. Not less than 74 workable seams of over 50 centimeters (20 inches) have up to to-day been proved to exist. The total thickness of these seams is more than 70 meters. Although the average thickness is therefore less than 1 meter, and although but few seams reach a thickness of more than 3 meters, their geonostic position is not unfavorable for working. "The stratification in undulating folds, which is that of all formations of the district, and therefore also of the coal measures," as is remarked by one of our chief geologists, M. von Decken, "the so-called basins and saddles, the concentration of the chief seams of coal in the upper and therefore the most easily reached strata, &c., are so advantageous for the coal-mining industry of the Ruhr, that if they had been specially created for the purpose of favoring the development of coal-mining they could not be more happily chosen."

With respect to the quality of their coals the Westphalian seams may be divided into four great groups. That of the lowest seams with the leading seam Hundsnoeken is characterized by a so-called meager coal. The second with the leading seam Sonnenschein by the so-called forging or smiths' coal. Both descriptions are distinguished by great purity, and the coal of the seam Hundsnoeken is composed of nearly identical elements with your Nixon's steam navigation coal. The third chief group, with the leading seam Röttgersbank, belongs to the fat or coking coal. The coal of these seams gives an excellent coke, and can be compared to the best Welsh steam coal. It is also used for numerous other industrial purposes, in the smithy, and for domestic fuel. The fourth and uppermost group is formed by the gas coal. The coal of these seams is particularly adapted for gas production, and may be compared to the West Hartley, Durham, and Northeastern coals of England. Its excellent qualities are proved by the fact that not only western Germany, but also a great number of Dutch, Belgian, and northern French towns prefer to use it for lighting purposes. But the coal of this group is also excellently adapted for many metallurgical purposes, for boilers, forges, and for domestic fuel. The lowest 15 seams belong to the class of meager, forging, and smiths' coal; 23 seams form the middle group of fat or coking coal, and no less than 35 seams form the uppermost group of gas coal. By far the greater part of our present production is taken from the northern half of the district, in which the most valuable seams of coal are covered by the southern edge of the great chalk basin filling the Westphalian low-lying plain, in the midst of which the town of Münster is situated.

It was only toward the end of the fourth decade of this century that adventures were pushed forward into this until then unopened district. The technical means hitherto employed in sinking pits and opening up seams now proved to be insufficient. The difficulties which had to be overcome lay in the eastern part of the district not so much in the nature of the stratification as in the quantity of water contained in the fissures of the chalk, while in the western part of the district great alluvial and diluvial deposits, consisting of sand, gravel, clay, and rubble, had to be contended with. Engineering difficulties had to be overcome, the victories over which have been as great as those fought in any mining district in the world.

Quite independently of the short space of time at my disposal it would not become me, as a non-technical person in mining-engineering matters, to go into much detail as to the great services rendered in winning the coal situated under the chalk formation, especially during the last ten years; nor as to the technical progress which has been made in the working, preparing for sale, and manipulation of our Westphalian coal, but I will only remark that it was one of your countrymen, a man who has individually rendered the greatest services to Westphalian mining industry, Mr. Wm. T. Mulvany, who introduced in sinking the pits of the collieries Hibernia and Shamrock an entirely new method for reaching the coal underlying the marl. At the same time the well-known German boring engineer Kind, associated with the Belgian engineer Chaudron, commenced the experiment as to reaching the coal-measures situated in the concessions of the colliery Dahlbusch by means of boring, which proved a complete success after the original wooden tubing had been replaced by iron. In the course of the last 15 years six pits have been sunk in our district on this system (Dahlbusch, ventilating-pit, drawing-pit Nos. 2, 3, and 4, Rhein-Elbe, drawing-pit No. 2, and the Königsborn pit). Other independently developed methods have been employed in that part of the district on the left bank of the Rhine, at the Rheinpreussen pit, situated in the concessions of the Haniel family, as also at the collieries Ruhr and Rhein, and Deutscher Kaiser in the neighborhood of Ruhrort.

The coal suitable for the manufacture of coke is found, as I have already remarked, in the group of so called fat coals in the Westphalian basin. The discoveries already made prove that this group of seams extends for about 67 kilometers from the colliery Rhein-Preussen, on the west bank of the Rhine, in a straight line to the colliery Courl, east of Dortmund. Its breadth from south to north (from the Haeswinkel and Carl-Friedrich collieries south of Bochum, to the Clerget colliery Recklinghausen, northward) is about 18 km. On this terrain there are situated more than 20 collieries,

working 14 seams, with a total thickness of 18.79 meters, being an average of 1.34 m. per seam. While the coal of the more northern collieries belong already to the gas coal group, those lying more to the south produce semi-bituminous coal, which is less adapted for coking. The production for sale of all the coking coal collieries amounted in the year 1878 to 11,000,000 tons. Nearly all these collieries possess apparatus for separating and washing their coals, which divide the raw product into the following various average sizes:

No. 1.—Screened and lump coal, passed over a sieve with round holes of 45^{mm} diameter.

No. 2.—Nuts, first sort, passed over a sieve with round holes of 45 to 27^{mm} diameter.

No. 3.—Nuts, second sort, passed over a sieve with round holes of 27 to 13^{mm} diameter.

No. 4.—Nuts, third sort, passed over a sieve with round holes of 13 to 5^{mm} diameter.

No. 5.—Dust coal, passed over a sieve with round holes of 5 to 0^{mm} diameter.

The percentage of ash, which varies in the raw product between 10 and 15 per cent., is reduced by the preparation of the coal to an average of 4 to 5 per cent., even in the least clean descriptions, such as nuts third sort and dust coal.

While the larger descriptions of the prepared product are used for domestic fuel, boiler, and other industrial purposes, the dust coal, as well as the greater part of the smallest class of nuts, which are crushed for the purpose in disintegrators, and mixed with the dust coal, are used for the fabrication of coke. The coke manufactured from this mixture contains on an average 6 to 7 per cent. of ash.

For the manufacture of coke out of Westphalian coal there exist at present about 2,400 coke ovens on the collieries, 1,700 on the iron-works, 1,200 in private hands, in all 5,300. We may assume that the number of coke ovens will in the course of this year be increased by about 500. By far the greater number of these coke ovens are constructed on the so-called Coppée system, which has, however, in late years, undergone some improvements in the brick-work, and in the volume of the oven. There are only 500 coke ovens on an entirely different system, approaching the English bee-hive shape. While the Coppée ovens, and especially those of improved construction, coke 6 to 7 tons of coal in 48 hours with a production of 70 per cent., the bee-hive ovens only hold 5 tons of coal, require 72 hours to coke the same, and produce 54 to 60 per cent. of coke.

Although it is the opinion of some iron engineers that the coke produced in the bee-hive ovens is superior in many respects to that of the Coppée ovens, the former have, nevertheless, not been generally adopted, since a coke can be far more cheaply produced in the Coppée ovens which answers all the requirements, not alone of our own native iron industry, but of that of Belgium, Luxemburg, and France.

The approximate quantity of Westphalian coal used for coking, and of the coke manufactured, is shown by the following table:

Coking works.	Number of coke ovens.	Coal used.	Coke produced.
		<i>Tons.</i>	<i>Tons.</i>
1. Collieries	2,400	1,530,000	1,020,000
2. Iron-works	1,700	1,057,500	750,000
3. Private works	1,200	765,000	510,000
In all	5,300	2,352,500	2,280,000
Per year and oven		683	422

Together with the increase of production in the course of the last ten years the field of sale for Westphalian coal has been proportionately extended. It now stretches in a northerly and northwesterly direction as far as the coasts of the North Sea; eastward as far as the German metropolis; to the southeast as far as the Thuringia and Saxony; in the south the states of Bavaria, Würtemberg and Baden, and Switzerland; in the southwest the iron districts of Alsace-Lorraine take a part of their consumption of coal and coke from Westphalia; in Belgium and in the north of France a considerable part of the consumption of gas coal is also drawn from our district.

The railways carried the principal of the traffic. Of the 19,000,000 tons produced in 1878—

80.87 per cent. were sent by railway.

5.43 per cent. were sent by road.

6.63 per cent. were coked on the collieries.

0.24 per cent. were shipped by the Ruhr.

6.83 per cent. were consumed by the collieries.

100 per cent.

The net of railways which covers the Westphalian mining and iron district will doubtless appear a very close one, even in the eyes of our respected English guests.

The principal lines of the four great railways, which do the work of our district, the Bergisch-Märkisch, the Cologne-Minden, the Rhenish, and the Hanoverian State Railway, with their various branches, and the numberless junction lines to industrial establishments have an approximate extent of 600 to 700 kilometers within the borders of the district, and between 70,000 and 80,000 wagons are required for the transport of our products.

Besides the river Ruhr, which in the course of time has sunk to insignificance as a means of transport, the great water-way of the Rhine serves principally for the water-carriage of our coal, nearly 2,000,000 tons of which (38,516,576 cwt.) were transported in the year 1879, the greater half of which went to Holland and Belgium, the lesser half to South Germany. It is unfortunately the case that the western parts of our country, and especially the great working district of the Lower Rhine and Westphalia, are still without any canal system, although for many years past projects have been in existence for artificial water-ways, on the one hand towards the east between the Rhine, Weser, and Elbe, connected with the net of canals of the eastern provinces of the monarchy as well as with the North Sea; and on the other part between the Rhine and the Meuse as a connection with the Netherland-Belgium canal system. We are sorry to say that the development of our traffic in this direction has remained far behind that of your country and of other civilized states; but it is obvious that the comprehension of the importance of such water-ways for our industrial existence is steadily increasing, especially as we see in the same a means of controlling and correcting exorbitant tariffs on the railways, since a great part of the latter have become the property of the state.

With respect to the rates of transport for coal, as well as for raw materials generally, on the railways of our district, we can happily note considerable improvements during the past years, in the realization of which Mr. William T. Mulvaney has been especially indefatigable. For more considerable distances the so-called pfennig tariff, a rate of 1 pfennig per cwt. and per German mile, or 2.23 pfennige per ton and kilometer (0.43d. per ton and English mile), has been for some time in existence for raw materials, such as coal, coke, bricks, ores, &c., but far lower tariffs, down to 1.2 pfennig per ton and kilometer (0.23d. per ton and English mile), have been adopted as special rates in many directions.

Our respected guests will be aware that the German coal industry has for some years past been engaged in an energetic struggle against the importation of English coal into Germany, which still amounts to the considerable quantity of about 2,000,000 tons per annum (according to the monthly statistical reports of the German Empire there were, however, imported into the Zollverein 40,326,272 cwt. only of English coal), and it is hoped that we shall succeed within a short time in supplying a large part of the coal consumed on the German coasts of the North Sea and the Baltic from our native mines. This struggle can, however, be only then successfully carried on in the face of the great distances which, in contradistinction to England, separate the Westphalian mining district from the sea-coast—220 kilometers to Antwerp to 350 kilometers to Hamburg—when the tariffs are reduced to the lowest attainable rate. The struggle against the importation of English coal was originally the more severe since not only geographical difficulties but the prejudice against the quality of Westphalian coal in comparison with English had to be overcome; and it was only after most comprehensive experiments made by the German Imperial Marine and in other quarters, and subsequently published, that the conviction has prevailed that the Westphalian coal, with reference to heating power, residuum of ash, and production of smoke, is fully equal to the English, and only in point of its cohesion rather less satisfactory. You, our respected English guests, will acknowledge that we are fully justified in these endeavors to induce our countrymen to use their native coal, and you will be the less anxious on this point when you consider that the coal exported from your country in the year 1877 amounted to 15,604,569 tons, or 88 per cent. of the whole production of our Westphalian collieries in that year, and that of this quantity the comparatively small proportion of 2,061,706 tons was shipped to Germany.

In order to understand the extraordinary development which has taken place in late years in the coal-mining industry of Germany, and especially in that of our Westphalian district, it is desirable to take into consideration some other causes besides those alluded to above. The unification of the Prussian law has especially conduced to develop mining industry and to call forth the spirit of enterprise. By the excellent "general mining law for the Prussian State," which was accepted and passed after long previous discussion on the part of the government, of the parliament, and of the parties interested, and which came into force on 24th June, 1865, and has since served as a model for the legislation of several other states, the paternal interference of the state in mining matters, which had become untenable, was put an end to, and our mining industry gained its long-sought-for autonomy. This legislation first enabled it to freely develop its powers in the direction so urgently required by the enormously

increasing demand for mineral fuel and by the great progress in technical science. The interference of the government is to-day confined to the inspection and police control of the collieries, which is carried out by special government mining officials. Further, it was only possible to sink the newer and deeper pits, and especially those in the northern part of the district, by means of a considerably greater expenditure than was necessary for earlier undertakings. In order to provide the necessary means and to induce large capitalists to invest in mining industry the form of joint-stock companies began to be adopted, in preference to the older form of partnership association (*gewerkschaft*), which appeared in many respects insufficient for this purpose. Nevertheless the old form of partnership association prevails in by far the greater part of our district. The subdivision of mining property in Westphalia is very great, as will be seen from the fact that no less than 193 collieries participated in the annual production of 20,000,000 tons, many of which, however, are exceedingly insignificant. But the greatest production by a single colliery company scarcely exceeded in the year in question 750,000 tons—i. e., not 4 per cent. of the total production of the district.

In order to complete our picture of the mining industry of the Lower Rhine and Westphalia, we must finally shortly allude to those institutions and societies whose object it is to serve the common interests of the whole mining district—the three *Knappschaftsvereine* (sick and pension funds) of Bochum, Essen, and Mülheim-on-Ruhr; the *Westphälische Berggewerkschaftskasse* (miners' fund) at Bochum; and the Society for the Mining Interests of the District of Dortmund, which latter has its seat in Essen. The latter society is a free association of all the larger collieries of the district, having for its object, as is shown by its name, the protection and development of the common and public interests of the Westphalian mining industry by all appropriate means and in all directions, but especially in an economical point of view. The other institutions named above have a legal foundation, and are under government control. The sick and pension funds have for their object the support of those workmen who have become invalids or are past work, as also of colliers' widows and orphans, the provision of medical attendance, and the cost of education of the children of those workmen employed at the collieries. In the year 1878 these institutions spent for the above purposes, inclusive of the cost of management, a total sum of 212,509 on a total number of 74,364 workmen. The *Westphälische Berggewerkschaftskasse* comprises a series of scientific institutions, which are also devoted to the general development of mining industry; a library of scientific works on mining, a mineralogical-geognostical museum, a chemical laboratory, a coal-testing house, and last, but not least, a mining school of two classes, in which the under colliery officials receive their necessary technical education.

Before I conclude I should like to touch upon a question which is perhaps especially interesting to our respected guests, as it is one which has repeatedly arisen with respect to the coal basins of their country, and which has often been the source of considerable agitation in the minds of many. This is the question as to the extent of the mineral treasure of the Westphalian coal basin, or, in other words, when its exhaustion is to be expected.

Fortunately for us, the examination made in this respect by German mining engineers of reputation has led to results showing that we can look forward to that period with calmness, and which are even more favorable than those to which the calculations of the parliamentary commission appointed in England for analogous purposes have led, which, as is well known, summed up its conclusions by declaring it probable that the stock of coal now proved to exist in Great Britain would, on the basis of the present consumption, last until the year 3100.

Here, according to the latest calculations, the quantity of coal which has been proved to exist, and of that of whose existence there is hardly a doubt, is summed up at 100,000,000,000 of tons.

Even were our production to reach the total production of Great Britain, say 140,000,000 tons per annum, and thus to be more than sextupled, the stock of coal in the coal basin of the Lower Rhine and Westphalia would last for fully seven centuries, or up to the year 2580.

IRON PERMANENT WAY.

[Report of E. Gruettfellen, Geheimer Baurath in the ministry of public works, on the results obtained with various systems of iron permanent way on the Prussian state railways, and on those private lines managed by the Prussian Government.]

The preparatory committee for this year's autumn meeting of the Iron and Steel Institute has honored me by the request that I would submit to you a short report on the experience, hitherto made on the Prussian railways, with the systems of the so-called iron permanent way.

My compliance with this request was all the more an agreeable duty, since it is well known what a lively interest English engineers have not only practically taken, of

late years, in that most important question as to the exclusive use of iron for the permanent way, but also that they have taken special care to keep themselves well informed as to the results obtained in this respect in Germany. A glance through the last year's issues of English technical newspapers, and especially of that excellent paper, *The Engineer*, proves at once that among technical men in England as well as in Germany there are, together with a few views differing in principle, many congenial ideas as to the constructive part of the question which occupies us to-day, and that thus the reciprocal exchange of opinions and experience can only have a most excellent effect on the development of the iron permanent way in both countries. And it therefore appears to me desirable to refer shortly to the above communications of *The Engineer*. I met, in the first place, with the interesting paper of Mr. Charles Wood, "Notes on the application of wrought iron and steel to permanent ways, with a description of a new kind of railway sleeper and clip chair," with respect to which I cannot avoid making a few observations.

I am, in the first place, entirely agreed with the general purport of this article, in which the importance of developing the use of the iron permanent way systems, as well in a general nationally economical point of view as especially in the interest of the iron industry, is clearly laid down. On the other hand, I must remark that Mr. Wood's characterization of the cross-sleeper system as the safest and most reliable, and as one in which engineers would doubtless always concur, does not coincide with our present views in Germany, in so far that the number of the adherents of the longitudinal system is here extremely great, and it further appears to me that those demands which Mr. Wood makes with respect to the necessary simplicity of these systems go too far, and can scarcely be fulfilled.

If the possibility of rolling complicated profiles in one piece were not materially a limited one, the reproach of complication might be justly applied to the longitudinal systems of the present day, and especially to those of Germany. But as long as the process of rolling does not deliver at one operation that profile which the combination of the rail and the longitudinal sleeper forms in the longitudinal system, numerous connecting pieces cannot be avoided.

Mr. Wood puts the further question: "Are systems of so complicated a nature as that of the system *Hilf*, in which, for instance, an exaggerated stress is laid on the construction of a probably entirely unnecessary extension of the gauge in curves, adapted for transatlantic countries, and especially for India?" I think, gentlemen, that I must say in reply that those longitudinal systems in which, as above, a considerable number of separately rolled pieces have to be joined to a whole are doubtless to a certain extent complicated, and it is further true that a certain degree of intelligence is required in setting up as well as in displacing such systems, and that in Germany the direction and inspection of such works is generally only confided to persons of the requisite technical education. Whether or not these demands exceed the conditions with which the English engineer has to reckon in the colonies—a question which I will not attempt to decide—they should in no case attain a measure detrimental to the further introduction of the iron permanent way into England herself.

In my opinion, we must decidedly accustom ourselves to apply to the construction of the permanent way of railways a share of that intelligence which, for instance, is already assumed as necessary in the building of bridges, in order that we may place the construction and maintenance of the permanent way on a higher level than hitherto, to the furtherance of economy and of safety in working.

Leaving for the present the points discussed by Mr. Wood, whose wrought-iron cross-sleeper system I shall not criticise here, I turn to that series of excellent articles commenced on the 12th September, 1879, in *The Engineer*, under the title "Iron Railway Sleepers," and which were brought to a close a short time since. These communications are prefaced by the remark that English engineers should no longer neglect the study of this important question, after the experience, satisfactory in every respect, which has been made on the Continent with iron sleepers, and since in Prussia the ministry has required the administrations of the government railways to adopt extensively the *Hilf* system of longitudinal sleepers, which has been successfully tested for some years; and that this circumstance is the more remarkable since Germany is not obliged to import the wooden sleepers which she requires, but on the contrary produces nearly sufficient for her own consumption.

I have to add to these generally correct statements only a few remarks. In Prussia, and also in the other parts of Germany, the question of the iron permanent way did not primarily arise out of the desirability of perfecting the construction of the already existing permanent way, but out of economical considerations. The construction with wooden cross-sleepers, and especially with the oak sleepers generally used in Germany, suffices, on account of the excellent elastic qualities of the timber, to satisfy all fair demands, in so far that the rails laid on this construction permit of the greatest usual speed with safety. But the consideration that the yearly increasing demand for wooden sleepers must render the construction and maintenance of railways much more expensive led Hartwich, in the year 1865, and soon afterward *Hilf*, both of

whom have earned lasting merit on this account, to make trials with a permanent way exclusively constructed of iron. After twelve years' experiments, practically useful systems having developed themselves, the Prussian state railways have, without abandoning in principle the use of wooden sleepers, very greatly extended the exclusive use of iron for their permanent way.

The sudden entire adoption of wrought-iron longitudinal and cross sleepers in place of wooden cross sleepers might at present have its drawbacks by the encouragement of one branch of industry to the detriment of another, while, on the other hand, the quiet development, which is still required for the further perfection of the iron systems, might be interfered with.

If after this digression I again turn to the article already quoted on iron railway sleepers, I must acknowledge to the fullest extent the completeness, the practical nature, and the critical clearness of the discussion. The Prussian systems of Hilf, as well as the cross-sleeper system of the Bergisch-Markisch (Upper Ruhr Valley line), are described in detail according to the original publications, and the longitudinal system of Haarmann, in its first construction, is also shortly discussed. I shall, however, supplement these communications, in so far as I shall allude later on to modifications of the systems Hilf and Haarmann, as well as of the Bergisch-Markisch cross-sleeper system, which are, in my opinion, highly important, and also to the longitudinal system of the Rhenish Railway, which is not referred to in The Engineer.

The author of the article "Iron Railway Sleepers" has chosen the following form of classification of the divers systems of wrought-iron sleepers: *

- a. Dish-shaped sleepers;
- b. Rails consisting of head and sole, supported by a double longitudinal sleeper;
- c. Ordinary rails resting on iron longitudinal sleepers; and
- d. Ordinary rails on wrought-iron cross-sleepers.

I also can entirely adopt this classification in my paper, as the systems at present in use in Prussia belong solely to these categories. I wish to remark in general that cast-iron, on account of its weight, as well as of its brittleness, is not used here for sleepers, nor has the consideration that iron can be easily cast in any shape induced us to abandon this principle.

Of the longitudinal wrought-iron system the so-called homogeneous system (Hartwich and Barlow) are not included in above classification. But it may suffice to remark that the Barlow system has not been adopted in Germany, and that the well-known Hartwich system, which has lain for years on long trial lines of the Rhenish Railway Company, has not proved successful for main lines.

The chief defect in this system was the small resting surface of the foot of the rail, by which the constant lifting and stuffing of the line was rendered necessary; nor, on account of the flat shape of the foot of the rail, could the friction between ballast and ballast be established, which is necessary to secure the line against horizontal displacement. The Hartwich system may, therefore, as far as main lines are concerned, be considered as abandoned; but it appears to have a future in the vicinal and street railways, for which it has already been adopted with advantage.

With respect to class a, dish-shaped sleepers of wrought iron, which have been constructed in England in various forms by Messrs. Livesey, Maclelland, and Mallet, I can pass over these with the short remark that they are neither used on the Prussian Government railways nor in Germany generally, since the trials made with a ballast of broken stone were not of a nature to encourage further experiments with this system, even though the use of wrought iron, which is very elastic in comparison with the nearly inelastic stone, promised more favorable results.

And I can also pass shortly over class b, rails between double longitudinal sleepers, or the so-called trunnion system, as experiments with these systems which were made in former years on the Prussian Government lines have not led to further trials.

The principal object of these systems, which is the shaping of that part most exposed to wear, viz, the rail, in such a manner as to insure the least possible loss of material in replacing, has lost its importance to a great extent, since the prices of steel rails now no longer differ greatly from those of iron rails.

The system of iron permanent way at present in use on the Prussian Government lines are exclusively such as come under the groups c and d; they therefore belong either to the class of the homogeneous longitudinal sleeper, or of the wrought-iron cross-sleeper. Both classes have been already applied to a considerable extent, since there are at present laid down 1,542 kilometers of class c, 528 kilometers of class d—2,070 kilometers.

In the map here shown those lines laid with longitudinal sleepers are marked in red, and those with iron cross-sleepers in yellow; and it appears, by a comparison with the total length of main line of those railways owned and worked by the Prussian Government, amounting to 19,000 kilometers, that already 11 per cent. of these lines are constructed with iron permanent way.

I now turn, gentlemen, in the first place, to the systems of longitudinal sleepers, and I have to remark that only the following three systems are applied on the Prussian

Government lines, viz, the Hilt system, the longitudinal system of the Rhenish Railway Company, and the Haarmann system.

I have named these three systems in the order of their introduction; and it will be seen that the extent of their application differs materially. Up to 1st April of this year there had been laid in iron permanent way, on the government lines, 1,360 kilometers on the Hilt system; 180 kilometers on the Rhenish Railway; 2 kilometers on the Haarmann system—1,542 kilometers.

I must remark, however, that since the above date 120 kilometers of the Haarmann system have been ordered for the government lines, about half of which will be completed this year.

THE DUTY ON FLAX REPEALED IN GERMANY.

REPORT BY CONSUL-GENERAL KREISMANN.

At the recent session of the German Diet the duty imposed on flax, &c., by the tariff act of the empire, of which full report was made in my No. 423, under, date of July 28, 1879, has been repealed. I therefore beg to inclose herewith a copy of the act approved June 6, 1880, repealing said duty, as published in the Imperial Advertiser. An English translation of the same is also furnished.

H. KREISMANN,
Consul-General.

U. S. CONSULATE-GENERAL,
Berlin, Germany, June 21, 1880.

[Translation.]

AN ACT in relation to an amendment of the customs tariff of the German customs territory. Approved June 6, 1880.

We, William, by the grace of God German Emperor, King of Prussia, &c., do ordain in the name of the empire, by and with the consent of the Federal Council and the Diet, as follows, viz:

SOLE SECTION. The customs tariff provided for by the act in relation to the customs tariff of the German customs territory and the revenues derived from customs and taxes on tobacco, approved July 15, 1879 (Imperial Bulletin of Laws, p. 207), is hereby amended as follows:

No. 8. "Flax and other vegetable materials for spinning, with the exception of cotton, raw, dried, broken, or hackled, or as waste—free."

The clause added to No. 22 a of the customs tariff, which reads: "Jute, manila, hemp, cocoa-fiber, raw, dried, broken, or hackled—free," is hereby repealed.

In witness our own imperial hand and the imperial seal thereto affixed.

Done at Berlin the 6th day of June, 1880.

[L. S.]

WILHELM.
BISMARCK.

PROHIBITION OF THE IMPORTATION OF AMERICAN PORK AND SAUSAGE INTO GERMANY.

REPORT BY MINISTER WHITE, OF BERLIN.

The "Reichs-Gesetzblatt" of yesterday, of which I inclose a copy and translation, publishes an imperial decree, countersigned by the chancellor, prohibiting the importation of certain products from America.

I have just called upon the head of the imperial chancery—Minister of State von Hoffmann—regarding the matter. He informs me that the prohibition is based entirely upon sanitary considerations; that, while

it has not been found difficult to detect trichinæ in ham and bacon, it has been found exceedingly difficult, almost impossible, in sausages and preparations of chopped pork. I was very glad to receive this assurance, for my first fear was that this was but a new development of the chancellor's policy of protection to agricultural interests.

I have sent you a telegram to-day as follows :

EVARTS, *Secretary, Washington :*

Importation of all preparations of pork from America, except hams and bacon, prohibited by imperial decree. Government assures me that it is simply a sanitary measure. Dispatch follows.

WHITE.

ANDREW D. WHITE,

Envoy Extraordinary and Minister Plenipotentiary.

LEGATION OF THE UNITED STATES,

Berlin, Germany, June 29, 1880.

Translation.]

No. 1388. *Decree regarding the prohibition of the importation of pork and sausages from America, of June 25, 1880.*

We, William, by the grace of God Emperor of Germany and King of Prussia, &c., decree in the name of the empire—the consent of the Federal Council having been obtained—as follows :

§ 1.

The importation of chopped or in a similar manner divided or otherwise prepared pork and of sausages of all kinds from America is prohibited until further notice. This prohibition does not include the importation of hams and bacon.

§ 2.

The imperial chancellor is authorized to make exceptions to this prohibition, and to adopt the measures necessary for this purpose.

§ 3.

This decree takes effect on the day of its publication.

Witnessed under our high signature and the affixed imperial seal, &c.

FOREST CULTURE IN PRUSSIA.

REPORT BY MR. ZIMMERMAN, CONSULAR CLERK AT BERLIN.

In matters of importance it is shown by history that services of great consequence have often been rendered by that class which may be called alarmists.

DESTRUCTION OF AMERICAN FORESTS.

Forest culture has received its due share of attention from the class referred to, and the subject of the destruction of American forests has been treated by them with especial frequency. They have, no doubt, by their dark forebodings, in some instances made men think a moment before destroying forests, and, in so far, they have been of service, for it is only necessary for one to reflect in order to recognize the vast im-

portance of the preservation and cultivation of our forests. While there is no immediate danger of wood becoming so scarce in the United States that we will have to send abroad for furniture or fuel, yet at the rate at which our industries, nearly all of which demand a large quantity of wood, have increased, we will soon begin to feel the exhaustion of our walnut and other valuable woods, in the high prices of articles manufactured from the same. There are at present numbers of saw-mills in Michigan, Wisconsin, and other States where black walnut is plentiful, owned by English capitalists, who have bought up the adjacent forests and are shipping the wood to England as fast as it can be cut and sawn. This, as we are a nation of merchants, suits us very well. We sell our merchandise on the spot without having to deliver it. But black-walnut cannot hold out forever, and when we remember that a black-walnut tree of average size, reduced to gun-stocks, &c., is worth from \$1,000 to \$1,500, and that we use thousands of these trees ourselves for those purposes, it will be seen that, if we expect to have a permanent income and escape positive loss, our trees must be properly cultivated and judiciously cut and sold. It is sheer recklessness, and contrary to the commercial tact of our nation, to diminish resources when they can be so easily increased. Aside from the energy and perseverance of the American merchant, the reason why he has so great a portion of the world's trade at his command lies in the fact that natural advantages are so great in his land. He can and does, because of the facility with which raw materials are obtained, easily surpass foreign competitors in the cheapness and general excellence of manufactures. Everything is on the increase, and why not increase our forests, and thus, in this direction, be secure from the possibility of losing a point?

AMERICAN FURNITURE EXPORTS.

Wood is needed in nearly every occupation. One writer enumerates sixty-six trades, in whole or in part dependent upon wood as their material for manufacturing. In the trade of carpentry alone nearly three times as many persons are employed as the cotton-mills employ, and nearly thirteen times as many as those who are employed in flour and meal production. So wood holds a very high position merely as an employing agent. While our export trade in grain, &c., has lately so wonderfully increased, our exports of wooden ware have also grown. A glance at the statistics respecting our household furniture export trade will be sufficient to apprise one of the growing importance and magnitude of the same. I find that nearly every country has imported furniture from the United States during the past year, and that, although a few years back, the imports into the United States of English-made household furniture were so large, yet it appears that now we sell nearly twice as much furniture to Great Britain as she sells to us. For manufactures to continue to progress at the present rate the best of timber must be had and plenty of it. While wood is growing scarce in America, in Europe, at present, it is increasing.

HISTORY OF GERMAN FORESTRY.

Russian, Scotch, and German forests are becoming more extensive every year, and it is hoped that the time will shortly be at hand when, in our country, as here in Prussia and Europe generally, forestry will be a question of political economy of the highest import.

A brief notice of the history of German forests, the development of

the science of forestry, and the establishment of forest academies in Prussia and other German states, may, just here, be of interest.

In early times forests in Germany were common property. Ownership of forests was not known. Of the lands suitable for agricultural purposes each one took possession yearly of a fixed portion for cultivation. From the forests, however, each one took as much as he desired and from where it pleased him to take, excepting, of course, from those groves set apart for religious purposes. Traces of the ownership of forests by private parties are found in the sixth century. At this stage of proprietorship one could not claim particular woods and prohibit the use of the same by others unless the felling and using of the timber had actually commenced.

Privileged forests.—About the earliest forest properties were the so-called “privileged forests” (*baumforsten*). By privileged forests are to be understood such as were the property of emperors, kings, princes, and other rulers and nobility. The privileges at first extended only to the exclusive right of hunting, fishing, &c., in the forests; but later complete control of them was claimed, and they were appropriated by the nobility and held as property belonging solely and entirely to themselves. In the earliest times traces of forest protection and preservation are to be found. In the middle of the thirteenth century we find that a penalty of three “schillings” was attached by law (“*sachsenspiegel*” and “*schwabenspiegel*”) to the cutting of wood in a forest without permission.

Private forests.—After the privileged forests came the private proprietorship of forests; then the “county forests,” and then the state forests of to-day. The laws and regulations under which the utilization of forests was most justly and equitably permitted occur between the years 1500 and 1800. Proper management of forests and discretion in felling the trees first began to be practiced in the mining districts. Then it was necessary to have at hand the wood absolutely required there in connection with the working of the mines, &c., and the owners of mines were compelled to preserve the existing forests. After the mining districts the forests in the neighborhood of cities and towns began to be cared for. The *Erfurt* forest economy dates back as far as 1359. In the Nuremberg district in 1368, and in the Frankfort-on-the-Main district in 1423, the planting of the pine-tree (*Pinus sylvestris*) was introduced. Until after the thirty years’ war very little further progress was made in forest matters. The early writings on the subject treat everything as being secondary to hunting and fishing. The subject first received a noteworthy impulse when hunting interests were made subordinate to forest interests, and forest economy came to be recognized as of the chief importance, and when those who dedicated themselves to the science of forestry studied and thoroughly mastered natural science, as being the foundation necessary for the proper pursuit of forestry as a profession.

SCHOOLS OF FORESTRY.

The first “forest schools” were established in Germany about the year 1717. They were so-called “high schools,” in which certain district officials (*Kreierercavalter*) were the teachers. These schools were at first self-supporting; later they received assistance from the state, or were made “state forest schools,” or “academies.” Thus forest academies were established at Dreissigacker in 1801; Tharandt, in 1816; Nelsungen, 1816; Aschaffenburg, in 1820; Hohenheim, 1820, and at Eisenach in 1830. To each of these academies three professors were detailed for

duty—one to instruct in forest economy, one in natural history and science, and one in mathematics. In Baden forest culture was added to the list of subjects studied at the Polytechnic Institute at Carlsruhe in 1832, and in 1838 the same was done at Brunswick. A chair of forestry was established at the university at Giessen in 1825, and later also at Heidelberg, Munich, Tübingen, and Leipsic. At the last three, however, because of the forests being too remote for the practical instruction necessary for a student of forest culture to have, and for other reasons, the subject was dropped. In Prussia the incitation to the study of forestry came from the state. From 1770, on the proposition of Minister Van Hagen, lectures on forest botany were delivered at Berlin, and excursions into the forests were made for the purposes of examining on the spot the subjects treated in the lectures.

In 1821 a forest academy was established at Berlin, in connection with the university there. This academy was, in 1830, removed to Eberswalde, where it now is. The course of study at the academy is as follows:

Instructor.	Subject.
Director of the academy . . .	Forest culture in general; method of forest appraisement; the manner of keeping and rendering accounts of income received from and expenditures made on account of forests.
A master forester	Protection of forests; utilization of same, and huntsmanship.
Do	History of forest culture and statistics relative to same.
Do	Geodesy and draughting.
A professor	Mathematics; physics and mechanics.
Do	Botany.
Do	Zoology and entomology.
Do	Mineralogy, geology, and chemistry.
Do	Prussian civil and criminal law.

Excursions are made into the forests three times weekly, and lectures and practical demonstrations are then given. In 1868 a second Prussian forest academy was established at Münden, on the same principle, and with nearly, if not quite, the same course of instruction. In the opinion of Professor Dankelmann, of the forest academy at Eberswalde, a reorganization of this course of study will take place within the next ten years, so that forestry subjects alone, such as preservation and cultivation of forests, botany, zoology, &c., will be taught at the forest academies, and general or relative subjects, such as geodesy, draughting, mathematics, and law, will be made a separate course for the forestry student to pursue at a university. (*Zeitschrift für Forst und Jagd wesen, von Dankelmann, Juli, 1880.*)

Before admittance to the forest academy can be obtained, the applicant must be under twenty-five years of age; must have certificates to the effect that he has passed the requisite final examinations at a Prussian gymnasium or "realschule" of the highest grade; and that he has passed his examinations as élève forester; and that he has a good character, and possesses the means necessary for his subsistence while studying at the academy. Information as to the further examinations which the student of forest culture in Prussia has to stand can, if desired, be found in the pamphlets herewith inclosed. There is thus, in this country, a trained body of men devoting all their energies to the advancement of the science of forestry. A thorough forester in Prussia is an adept in natural history relative to forests and their inhabitants; somewhat of a geologist, botanist, and chemist; and the possessor of a good general knowledge of the laws of his country. He knows every foot of land

in his district; at the various stations, he notes the rainfall, the force and direction of the prevailing winds, their humidity and dryness, the temperature, &c. For the encouragement and assistance given to these men by the state, the return made by them in the management of its forest interests is of the greatest value.

The Prussian forestry corps at present consists of 1 chief general master forester, 3 general master foresters, 30 chief master foresters, 1 forest director in Hanover, 93 master foresters, 685 chief foresters, 3,354 district foresters, 356 forest keepers, and 70 other minor officials.

PROFITS OF FOREST CULTURE.

I submit the following table in order to show the average pecuniary profits of forest culture in Prussia. This table is made up from official sources and the estimates are based on the receipts of former years and on what is so far known of the product of the forests for the current year.

Estimated receipts for the year ending March 31, 1881:

From wood	\$10,558,666 67
Other sources	1,465,142 86
Total receipts	12,023,809 53

Estimated expenditures:

For salaries, cost of cutting and transporting wood, repairing of forest roads, &c	7,234,833 34
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Thus leaving as net income	4,788,976 19
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Although the average receipts for wood during the three years from March 31, 1877, to March 31, 1880, amounted to only \$10,313,248.34 and the receipts of the year ended March 31, 1880, only amounted to \$9,968,044.05, nevertheless, in view of the known product, so far, of the current year (March 31, 1880, to March 31, 1881), if the very favorable showing of the same as compared with the three preceding years continues, then the receipts estimated as above are in all probability proper. The average net income of several years back has been but very little less than the amount above estimated.

INFLUENCE OF FORESTS ON CLIMATE AND SOIL.

One of the subjects most thoroughly and attentively studied at present at the forest academies and stations in Prussia, is the influence of forests on climate and the fertility of the soil. As warnings to wood destroyers, large tracts of land are pointed out in various countries which formerly were covered with forests within whose borders were springs and brooks, where now, man having thoughtlessly stripped the land of its trees, the eye looks in vain for a grass plot; the palate longs for a drink of fresh spring water. The sunbeams unhindered strike the naked earth and raise the temperature of it and the neighboring air to a high degree; in the night, however, this heat is quickly and freely given out into space and the temperature suddenly sinks. Sufficient rain does not fall, nor does it fall regularly, but pours down in torrents and no good comes of it. The arid ground cannot retain the moisture, but from the dry surface the fallen water evaporates like ether, and vegetation receives but little assistance in its efforts to grow.

These students are now satisfied that the forest moderates the extremes of temperature and ameliorates the climate. It is especially worthy of note that the daily temperature of forests does not reach so

high a point in summer as that of open fields, nor in winter does it sink so low. Changes of temperature do not occur so suddenly in the forest, for ground shaded by trees becomes warm more slowly than uncovered land, and does not cool off so quickly.

If one examines the statistics furnished by the Prussian meteorological stations, relative to the temperature of the surface of the earth and the neighboring atmosphere in their districts, it will be found that the rise and fall of the same are quite gradual, and that the extremes of temperature are reached somewhat later in the forests than in the open fields. This gradual rise and fall of temperature is one of the chief requisites for the proper growth of forest trees as well as for plants generally. Young trees are often injured by sudden changes of temperature, and some species cannot thrive unless some protection from such changes is furnished them. The leaves of the trees retain a great deal of water, which is evaporated and thus given back to the air, the humidity of which is thereby increased, and the supply of moisture to the soil is rendered more equal and regular. That the soil receives is absorbed and evaporated very slowly. Much of the rain that falls upon open fields is wasted, the supply being often greater than the requirement for the time being. Forests, moreover, directly induce rain. The air within the forest becoming warm by the absorption of heat, both from the ground and the air next above it, leaves over the forest a current considerably colder than the neighboring air, and rain-clouds passing over are, in most cases, condensed by coming in contact with this colder atmosphere. To exercise such an influence, however, on atmospheric temperature, the forest must be of very considerable extent. Authorities on the subject of forest culture in Prussia are unanimous in the opinion that rainfall is more abundant and regular in districts well wooded than in bare lands. In this connection it is worthy of remark that the forests are generally rich in springs and brooks. This alone goes a great way towards showing the intimate relations between woods and water.

And further, while the forest tends to moderate climate, while it regulates the supply of moisture, the forest land is continually receiving a supply of the richest soil through the yearly fall of leaves. This soil increases the capacity of the ground for warmth, its moisture-retaining properties, and furnishes all the requirements necessary for the growth of plants. The important influence of forests on climate and the fertility of the soil having long been recognized, it has, therefore, often been attempted to forest lands sterile because of unfavorable conditions of climate. These attempts have often been crowned with success. The foresting of the Luneberg heath, a sandy plain near Hanover, was successful, though accomplished at great expense and in the face of various difficulties. In like manner the foresting of sandy stretches of land in Brandenburg and other Prussian provinces has resulted very favorably; the aim in all these cases being, of course, to counteract the influence that these sterile tracts exercised over the neighboring fertile soil and to convert them into useful and productive possessions.

Again, referring to the fact that considerable moisture is necessary for the growth of trees, it is proper to remark that when it is deemed desirable to change the course of a stream or rivulet, in order to irrigate fields designed for cultivation, it should carefully be ascertained by noting the rainfall, remaining springs, brooks, &c., whether such a change can be made without detriment to such woodland in the neighborhood as may be in part dependent on such waters for moisture.

Draining too much of the water from forest lands destroys the forests,

as does deforesting often dry up streams. Here in Prussia this is so well understood and appreciated that before any such course is pursued, very careful consideration is given to the subject, and the forest officials are called upon for, and they submit, reasons "pro" and "con." A few years ago, for instance, it was desired to reclaim certain bog land near Chorin, in Brandenburg, but in order to do so, it was found that it would be necessary to reduce the "Paarsteiner Lake" a square mile or more. To this the forest authorities strenuously objected, because they feared that such a reduction of the water surface would so materially lessen the moisture of the air and soil that the very existence of the neighboring forests would be hazarded. The project was therefore not carried out. This one instance shows how thoroughly the science of forest culture is appreciated in this kingdom.

The proper "hygrometric and electric equilibrium for successful farming can only be maintained, it is estimated, when at least 20 per cent. of the total area is forest land. Mirabeau estimated in 1750 that 32 per cent. of the land in France should be woodland. Reutzsch estimated that in the interior of Germany the proportion of woodland to the entire surface should be 23 per cent., while near the coast, "where the air is supplied with humidity by evaporation from the sea," 20 per cent. would be sufficient and proper. One writer very pertinently remarks:

Now, if the German states require 23 per cent. midway between the North Sea, the Baltic, and the Mediterranean, what is demanded for the great area between the Mississippi and the Rocky Mountains, almost without water from the Gulf of California to the Polar Sea.

EUROPEAN AREAS OF WOODLAND.

The following table shows the total area in woodland, and the proportion of woodland to the entire surface of the countries mentioned:

Country.	Area in woodland.	Per cent. of total area.
	<i>Square kilometers.</i>	
German Empire	137,589.88	25.4
Kingdom of Prussia	81,488.80	23.3
Great Britain and Ireland	7,653.34	2.4
France	89,857.94	17.0
Russia (including Finland)	2,037,054.82	39.2
Austria	94,868.88	31.6
Hungary	80,719.50	26.8
Italy	67,888.98	22.9
Sweden	175,696.46	89.5
Norway	98,447.28	81.1
Switzerland	7,873.58	19.0
Belgium	4,404.80	15.1
Netherlands	2,252.00	6.8

FOREST CULTURE AND DESTRUCTION IN THE UNITED STATES.

In the United States forest culture is not of very slow development. Were those extensive plains which form so large a part of the area of our western country properly forested, the parched and scanty vegetation would give way to the bright verdure that betokens fertility, and the many beds of river and rivulet that are now dry would once more carry water, the blood of the soil, coursing through that country.

A certain writer says that "in some sections of New York where the forest trees have been cut away wheat now often fails from winter-killing, although the soil is not exhausted and is abundantly fertilized by the most approved manures." And yet, although the consequences that

are sure to follow the unwise felling of forests are daily pointed out, the burning and clearing up of forest land in the United States is still sometimes wanton, and too often thoughtless.

To give an idea of the rapidity with which our forests are disappearing, it may be stated that not many years ago, just previous to the settlements in Wisconsin and the upper peninsula of Michigan, 10,000,000 acres of land were covered with valuable forests. In 1870, after deducting what had been sold and burned, it was found that about 4,000,000 acres remained. By careful statisticians, the removal of forests in that region was estimated in 1870 to be at the rate of 330,000 acres annually. In a few years more at this rate the inhabitants of those parts will be buying even their fire-wood from outsiders.

It takes 150,000 acres of forest land to supply cross-ties for the railroads of the United States. For a new road about 2,600 ties per mile are required, and to keep a road in repair about 100 ties per mile are required annually. About 200 ties are obtained from an acre of a good piece of timber, and this is mostly white or burr oak, one of our best and most useful woods. The Northwest, however, where so much destruction has been going on, was always the first to attempt to repair the damage done. In Iowa, Illinois, and Missouri trees are being extensively planted and cultivated, and their value is now fully appreciated. It has been, moreover, shown by experiments here in Germany that forest-growing is not such slow work after all. It has been found that by planting white oak, maple, &c., in five years or so a good crop of hoop poles, &c., can be obtained from the smaller trees; the more promising being permitted to grow. In two years more another crop may be removed, and in this way the trees become a source of profit after the first five years. Cottonwood will make four rails in from seven to nine years, and maple the same in from eight to ten years. Cottonwood, soft maple, and the California redwood (*Sequoia sempervirens*) are regarded by many as the best trees for forest-planting when quickness of growth is desired, and also when shelter belts around orchards, gardens, barns, and stock-yards are necessary. The wisdom and profit of forest culture are being rapidly recognized in the United States, and it only needs a little more agitation of the subject, a few more State premiums, and the attention of Congress to make the same one of general study and interest in the Union. Of course difficulties will have to be met and overcome by the tree-planter and he must not let his expectations of profit be too great; but he must have patience and perseverance, and expect for a few years nothing but outlay, and perhaps some loss. The final income and remuneration, however, can be counted on as sure.

In a few years; it is to be hoped, the subject will engage national interest in the United States. All European countries are fully alive to the importance of the subject, and why should we be so far behind them? "France, Austria, and Russia adopted at an early day the same system as the German for promoting forest culture, and the artificial forests of those countries rank among the most valuable government property." Just at this time, when our fruit export is reaching such proportions, it would be well for fruit-growers to study carefully the good influences which belts of timber exert over the neighboring orchards. Many farmers have learned, by sad experience, that by cutting down their forests indiscriminately they have made the way clear for chilling, biting winds and frost to nip their growing fruit. They have thus given winds with their absorbing currents full sweep, and often the failure of the fruit crop is the result of the rapid evaporations and consequent sudden increase of cold which they cause during the fruit-forming season. This

subject of forest-tree planting deserves far more of the attention of fruit-growers than it receives at present.

The varieties of climate and soil in the United States permit the growth of nearly every species of tree, and importations of many of the varieties most generally cultivated in Prussia and elsewhere would doubtless be profitable. Germany has made large importations of the redwood (*Sequoia sempervirens*) from California, and some of her most valuable forest tracts have grown therefrom.

The forest trees other than this principally cultivated in Prussia are:

1. Oaks.—*Quercus pedunculata* and *sessiliflora*.
2. Beech.—*Fagus silvatica*.
3. Birches.—*Carpinus betulus*; *Betula verrucosa*.
4. Alders.—*Alnus incana*; *Alnus glutinosa*.
5. Firs.—*Abies excelsa*; *Abies pectinata*.
6. Pines.—*Pinus sylvestris*, *strobus*, *austriaca*, and *Montana*.
7. Larch.—*Larix Europæa*.

As to the various methods of forest cultivation, I inclose herewith a pamphlet in which they are described.

Of trees already introduced into the United States, the ailanthus is a much more valuable one than is generally admitted. For posts no timber is better suited. The testimony of many farmers shows that it is nearly as good as locust, and for fuel is equal to oak. It is hardy, grows rapidly, and is said to be well adapted to growth on the prairies in the Western United States. In its native country (China) it often attains a height of 175 feet. The cork tree could also doubtless be cultivated in many parts of the United States with success. In 1859 a farmer in Wayne County, Mississippi, "planted some Spanish cork acorns received from the Department of Agriculture. Twelve years later he had trees from these acorns, the largest of which were 13 feet in height, 11 inches in diameter, and the cork around the body was more than one inch in thickness." Also cottonwood, maple, box-elder, ash, walnut, chestnut, fir, pine, larch, &c., could be easily grown and cultivated in many parts of America, where even fire-wood is so scarce that farmers have to spend a great deal of time in hauling it from a distance.

PRUSSIAN FOREST STATISTICS.

In this connection I take occasion to submit the following tables:

Table showing the average number of trees planted per hectare, according to the distance between each plant, in Prussian forests.

[1 hectare = 2 acres, 1 rod, and 35 perches.]

Distance apart.	Number of plants.	Distance apart.	Number of plants.	Distance apart.	Number of plants.	Distance apart.	Number of plants.	Distance apart.	Number of plants.
<i>Meters.</i>		<i>Meters.</i>		<i>Meters.</i>		<i>Meters.</i>		<i>Meters.</i>	
0.1	1,154,700	1.4	5,801	2.7	1,584	4.0	722	5.5	382
0.2	283,675	1.5	5,132	2.8	1,473	4.1	687	5.6	368
0.3	128,300	1.6	4,511	2.9	1,373	4.2	655	5.8	343
0.4	72,169	1.7	3,906	3.0	1,283	4.3	625	6.0	321
0.5	46,188	1.8	3,564	3.1	1,202	4.4	596	6.2	300
0.6	32,075	1.9	3,199	3.2	1,128	4.5	570	6.4	282
0.7	23,585	2.0	2,847	3.3	1,060	4.6	546	6.5	273
0.8	18,042	2.1	2,618	3.4	999	4.7	523	6.8	250
0.9	14,256	2.2	2,386	3.5	943	4.8	501	7.0	236
1.0	11,547	2.3	2,183	3.6	891	4.9	481	7.5	205
1.1	9,543	2.4	2,005	3.7	843	5.0	462	8.0	180
1.2	8,019	2.5	1,848	3.8	800	5.2	427	9.0	143
1.3	6,833	2.6	1,708	3.9	759	5.4	390	10.0	115

Table showing the average yearly product of wood per hectare in Prussian forests.

[Classified according to condition of soil, position, &c.]

Description.	Class of soil, &c.					Age of tree at time of felling.
	I	II	III	IV	V	
	Cubic meters of solid wood.					
FOREST OF FULL GROWTH.						Years.
1. Oak	4.8-4.2	4.2-3.6	3.6-3.1	3.1-2.9	2.7-2.4	160-120
2. Birch	5.2-4.8	4.6-4.0	4.0-3.4	3.4-2.9	2.9-2.4	(140) 120-90
3. Pine	7.6-6.8	6.7-5.9	5.7-5.0	4.6-4.0	3.5-3.0	120-70
4. Fir	5.9-4.9	4.8-3.8	3.8-3.1	3.0-2.5	2.1-1.7	(120) 100-60
5. Birch	6.2-5.4	4.9-4.3	3.5-2.9	2.2-1.5	1.0	60-40
6. Alder	5.2-4.8	4.3-3.8	3.8-2.9			70-50
FOREST OF MIDDLE GROWTH.						
7. Overgrowth, beech, &c.; and hard wood undergrowth	5.7	4.8	4.0	3.2	2.5	30-35
8. Overgrowth, oak, &c.; and mixed hard and soft wood undergrowth.	4.3	3.8	3.3	2.9	2.3	18-25
FOREST OF UNDERGROWTH.						
9. Oak or beech, mixed with other hard wood, and hazel	4.4	3.8	3.2	2.6	1.9-1.7	15-20
10. Alder	6.3-5.9	5.3-4.9	4.3-3.8	3.0-2.5	1.9-1.4	25-35
11. Birch, entirely or chiefly	5.2-4.8	4.6-4.0	3.8-3.2	3.0-2.7	2.3-1.9	20-30

THE PRESERVATION OF AMERICAN FORESTS.

How best to preserve the remaining American forests is a question that has been often asked, and as often answered in the United States, yet few of our farmers do more than shake their heads and say it is a shame to destroy our forests so recklessly. They admit and see the impropriety and positive wrong of such proceedings, and yet, comparatively speaking, very few of them give the subject serious practical attention. They should unite in their endeavors to promote forest culture. It may be said that nowhere in the United States have any considerable number of farmers agreed among themselves to cultivate and preserve forests here and there on their respective farms, for their mutual benefit; and yet this is extremely necessary, for on one farm there may be a large wood left standing where it is of not much practical benefit, while on another, where its presence and influence are beneficial, it is unwisely and thoughtlessly felled.

Farmers complain of freshets, which are often only the manifestations of nature's disapproval of the way in which man is considerably disturbing the equilibrium and distribution of her forces. On hillsides denuded of trees by the woodman, the snows melt rapidly, and with the rain pour suddenly into the springs and brooks, which swell the streams and rivers into torrents. The crops and soil along their courses are ruined and washed away. Nor is this all. "Drought follows freshet." The first few hot days dry up all the moisture left in these lands, and the rivers, brooks, and springs grow smaller and smaller, give out less and less moisture to the fields and meadows through which they flow, until, parched and withered, the crops are destroyed by the drought. Hillsides covered with woods, however, distribute the rainfall and permit of the melting of the snow more equally, and the water supply is consequently more uniform and lasting.

In 1871, it was officially reported that one-third of the wood and timber existing in California in 1848 had been consumed, and it is probably due to the actual facts and figures of this kind that the legislature of California took a step in the right direction by passing an act providing for the appointment of commissioners, who were to appoint a State forester, who should collect, import, grow and exchange seeds and forest-tree plants and distribute them in the State, and who should also, from time to time, diffuse information on the subject of tree culture.

I have no means of ascertaining whether the act was carried successfully into effect or not; but it is to be hoped that it was, and that other States will follow in the same direction. It will soon be time to pay the \$1,000 offered by one of our Western State agricultural societies for the best ten acres of timber grown within the State during the ten years succeeding that date. This premium is payable next year, and if other State societies had only made such liberal offers, their States too would enter on that year with a question of economy, which is one of the hardest to make people understand, settled and made clear. The benefits and profits to be derived from forest culture would be fully recognized, and no prizes or premiums would be necessary for the future encouragement of the same.

Now, having hastily reviewed the principles of forest-tree culture as understood in Germany, and having applied them as often as possible, perhaps too often, to matters of like nature in the United States, I have to bring this paper to a close.

I have taken nearly all my instances of forest destruction, and the results therefrom, &c., from the United States; for although there are plenty to be had in Prussia and in Europe (France, Switzerland, and Spain, especially), I preferred to use instances occurring at our very doors as illustrations of the subject in question.

F. C. ZIMMERMAN,
Consular Clerk.

UNITED STATES CONSULATE-GENERAL,
Berlin, Germany, November 6, 1880.

AMERICAN GOODS IN BOHEMIA.

REPORT BY CONSUL PHELPS, OF PRAUGE, ON THE IMPORTS OF AMERICAN PRODUCTS AND MANUFACTURES INTO BOHEMIA, AND HOW TO ENLARGE THE SAME.

The declared exports from this consular district of the year which closes to-day were, in value, \$1,686,352.52, and the number of invoices legalized was 3,293. The exports of the year ending September 30, 1879, were 1,762,703.72 florins, or \$743,400.29, showing an increase of \$942,952.23 for the year 1880.

The past year has been favorably marked by a commercial and industrial revival in Bohemia. This is shown by increased exports and imports; by a decrease in the number of failures; by the higher wages paid to workmen of all classes; by the better condition of the laborers in those mountainous districts which formerly demanded assistance, and even charity; and by the auspicious commencement of various industrial and commercial enterprises.

AMERICAN PRODUCTS.

Although there is no fixed data by which the exact value of the American products entering this country, from all sides, and used her-

can be distinguished from that which passes through to other provinces of Austria, it is evident that American products are steadily gaining ground in this district.

PETROLEUM.

This country, with a population of 5,000,000, has comparatively few large towns in which gas is used. In all other places petroleum is consumed, a small portion of which is from Galicia, but the better, and far greater quantity, is from the United States.

SEWING-MACHINES.

Until 1874 American sewing-machines were sold here by an agent on his own account. Since then they have been sold by the companies. Two companies sell about 7,000 machines yearly. They have five branch establishments in Bohemia. The machines are shipped to Hamburg, and sent thence in tow-boats up the Elbe and Moldau to Prague. Machines are manufactured in Germany and in Vienna, and sell at lower prices, but are manifestly inferior in workmanship, capacity, and durability.

AGRICULTURAL IMPLEMENTS.

Some American agricultural implements compete here successfully with those from Germany and England.

WANTS.

There is a market here for canned goods, especially oysters and sea-fish generally, American crackers, specialties of stationery, such as sets of account-books, also blank and scrab books, adjustable book-covers, letter-files; machines and tools for working in metals, wood, and stone, with specimens of work; machines and apparatus for type-setting, printing, embossing, portable printing-presses; machines and tools for book-binding and paper-working; motors of small power, hydraulic and pneumatic apparatus; stoves, ranges, kitchenware, washing-machines, and clothes-wringers; and, strange as it may seem, in view of the beautiful and celebrated glass manufactures of this country, there is a market for the pressed-glass goods used in America, especially articles of common use, such, for example, as mucilage-holders. The glassware of Bohemia is cut-glass, elegant but expensive.

HOW TO INTRODUCE AMERICAN TRADE.

But I must remark that too many American merchants and manufacturers are under the impression that to introduce new goods into a foreign market it is only necessary to ask a consul to furnish "a reliable agent" for their sale, and accompany the request with a circular in English describing the article. This is a mistake. No man fights a battle three thousand miles from the field of action. This system may do between American cities, aided by information obtained through commercial agencies; it is not applicable to a foreign land. The American and English manufacturers and merchants who have achieved marked success have employed agents abroad speaking the language of the country, established headquarters in Europe, visiting in person the cities and towns, carrying samples of goods and models of machines, explaining the details, answering questions, and removing objections. The business men most desirable as agents in a foreign country, speaking no English,

immersed hourly in their own business, generally have little time or patience to study out a paper description of an unknown and unheard-of article. The circular would naturally be treated here as a similar circular in a foreign language would be treated by a busy American merchant. The article recommended must be seen and its superiority shown before they are interested, and they must negotiate personally with the owner or his accredited agent, who can supply the goods forthwith.

DEPOT FOR AMERICAN GOODS.

I know of no means by which the sale of American manufactures and products can be protected from poor imitations, and so greatly and rapidly increased as by the opening in a foreign city of a depot or store for the exhibition of American products in charge of a person residing for the time in the place, and competent to answer all questions concerning them. The expense of such a store would be divided among those using it, whether few or many. Consuls in most places would doubtless be able to assist and advise merchants in such an undertaking.

INDUSTRIAL SCHOOLS.

The remote influence of American ingenuity and industry is partially seen in the decrease of exports from Bohemia, except in the articles of glass and china ware, and in the hope to meet this foreign competition by the institution by the ministry of commerce and chambers of trade of industrial schools in this city and in four or five other towns, for the instruction of mechanics and apprentices in their different trades. There are evening schools for shoemakers, also for tailors, furriers, lacemakers, workers in leather, glovemakers, gilders, carvers in wood, and engravers.

AGRICULTURAL PRODUCTS.

But above all these, the attention of the government, the press, and the people is drawn to the accounts of the boundless harvests of America and its seeming capacities for feeding the world. The descriptions of its immense farms and limitless fertility are read with wonder not free from solicitude. Bohemia is essentially an agricultural country, and the prospect that American wheat may supplant the native supply creates serious alarm. Its surplus of cereals sold to its western and northern neighbors has yielded money and occupation to thousands of laborious hands. The Hungarian wheat passing through Bohemia gave business to its railroads, and indirectly to its coal and iron industries. The large landowners look with anxiety to a change in all these things, and the poor farmer hopes to emigrate to the rich and cheap lands of the new world.

BEER.

Beer continues to be thought here to be the great panacea of life. There are in Bohemia in full operation mostly day and night, 884 breweries, which produce in a year 123,229,920 gallons of beer, which yielded an internal-revenue tax of about \$4,000,000. Alcohol was distilled from 254 distilleries; but this feels the importation of an equally good and cheaper alcohol from America.

CONSULAR REPORTS.

I would respectfully suggest, for the consideration of the Department, the expediency of retaining a few thousand copies of the Consular Re-

ports unbound and in pamphlet form for the easier and cheaper distribution by the Department, and through the consuls, of reports of special districts to parties interested, and who may not desire a volume of 1,000 pages.

C. A. PHELPS, *Consul*.

UNITED STATES CONSULATE,
Prague, Bohemia, September 30, 1880.

PETROLEUM WELLS IN GERMANY.

REPORT BY CONSUL GRINNELL, OF BREMEN, OF THE ORGANIZATION OF A COMPANY IN THAT CITY FOR THE PURPOSE OF BORING FOR PETROLEUM IN GERMANY: PROSPECTUS OF THE COMPANY.

A company has been formed in Bremen, called the German Petroleum Company, with a capital of 1,000,000 marks, for the purpose of digging for petroleum near this city, and as one-half the nominal capital of \$240,000 has just been subscribed, I inclose the prospectus, with a translation, as a possible matter of interest to the Department, and add the following explanation of its inception:

Some years ago a small firm, observing indications of oil on the Luneberg Heath, especially at its southern corner, distant about 80 miles from Bremen in a southeasterly direction, began digging two wells, and at a distance of a few hundred feet, as the firm alleges, there was found a good quantity of lubricating oil; but as the means of the firm were exhausted, and it was deemed necessary to dig much deeper, the parties succeeded in interesting Mr. H. H. Meier, a prominent man and a worthy merchant, with the result above given.

He stated that deep boring will be commenced as soon as the machinery can be ordered from the United States.

WILLIAM F. GRINNELL, *Consul*.

CONSULATE OF THE UNITED STATES,
Bremen, Germany, March 31, 1880.

[Prospectus of the Boring Company.—Translation.]

GERMAN PETROLEUM BORING COMPANY.

Capital, 1,000,000 marks, in shares at 500 marks.

Since the production of petroleum in the United States of North America has taken such extraordinary dimensions, and has become a large source of the wealth of America, trials have been made in different countries to discover and produce petroleum; especially in Germany, where so large a part of the American oil is consumed, as traces of petroleum have without doubt appeared in different parts of Northern and Southern Germany. Among these, special attention has been drawn to the Luneberger Heath, where not only the so-called oil-holes are abundant, out of which lubricating oil is made with little artificial means, but where many tokens of a greater quantity of petroleum under the earth came to light.

Boring trials are known to us nearly twenty years, which have increased during latter years, but almost all have been partly but not sufficiently successful. If these trials be examined, one sees at first sight that they were undertaken partly without sufficient funds, partly with insufficient practical knowledge. They prove, however, that petroleum exists, even if at a greater depth, in considerable quantity.

In order to enter into the geognostical question a little further, we will simply state that oil is found in the different zones in different states. The depth of the first zone

which contains the lubricating oil would extend from 200 to 300 feet, while the true light-burning oil is found in greater depths of 600 to 1,000 feet. The burning-oil zone is about 800 to 1,200 feet deep in Pennsylvania; in the Bradford district, 1,200 to 2,000 feet.

The former failures in the Luneberger Heath were due partly to the erroneous expectation that the oil would spout out from the ground, partly on account of the deficiency of proper knowledge of the manner of finding the oil, whereas in America also, in most cases, the oil is only produced, after all sorts of boring and holes made in the ground, by pumping.

In the Bradford district, also, which contributes 44,000 barrels to the daily production in Pennsylvania of 56,000 barrels, they have bored many years in vain for burning oil, until at last, in December, 1876, by a correctly conducted boring, they succeeded in their undertaking, which was in December, 1877, already extended to 1,600 holes producing oil.

If the problem be correctly solved, not only will this organization reap a rich benefit, but the national welfare of our Fatherland will be greatly increased.

After the cessation of the works of the First Bremen Boring Company, at Odessa and Edemissen, on account of insufficient funds, the Second Bremen Boring Company was formed, which, through the arrival of a competent leader, who was a long time employed in the petroleum districts of Pennsylvania, and who has studied the situation there, has arrived at a certain result as to boring holes, which, bored to the first and second oil zones, are in pretty regular working order in pumping lubricating oil, and which, in proportion to the means used, have in some measure a satisfactory result.

This lubricating oil is, after an analysis of Dr. Fischer, of Hanover (publisher of the Dingler Journal), as good as the best known American lubricating oil, and can be sold without any difficulty at 15 marks per cwt. A number of boring holes could be made with ease, for lubricating oil, with a cost of 10,000 marks per hole, each of which would put in prospect a net profit of about 15,000 marks per annum for about three years, by which a production per hole is reckoned at only three cwt. of oil per day.

In favor of deep boring, the experimental boring and the experience of the First Bremen Boring Company should have made the most important disclosures, proving the American theory that the specific light-burning oil is only found at great depths, the principal place of deposit of petroleum.

Deep boring has not hitherto succeeded on account of want of capital, but nothing prevents that boring should immediately commence after the formation of our company.

It is proposed to contract with German, English, or American engineers to make boring holes. Perhaps engineers will be found who would be willing to accept as their pay part of the petroleum produced, which would lessen the risk of the company greatly, if even the profit of the same on that account were smaller.

The undersigned committee of the German Petroleum Boring Company has secured the right of possession to about two hundred acres ("morgen") of land for a fixed price in, according with the opinion of competent men, the richest petroleum part of the Luneberger Heath. Further, a contract is concluded with the Second Bremen Boring Company to the effect that for the sum of 60,000 marks all plant of the company, three boring holes, about two and a half acres ("morgen") of land, a dwelling-house, a boring tower, engine, pumps, steam machines, steam boilers, and all necessary American boring utensils, are transferred.

We believe by that that we have arrived at a healthy and solid, if not extended, basis, particularly as Herr Meier, who has hitherto conducted the borings, has bound himself to enter into our company. We believe a capital of 500,000 marks will be sufficient to insure with success the production of petroleum. It will be judicious, however, to possess a larger capital, in order to have sufficient funds in case of any little failures in boring, as well as in case of lasting results, to be able to extend at once the production of petroleum. We have, therefore, fixed the capital at 1,000,000 marks, but the authorization contained in the statutes gives us the privilege of undertaking the formation of the company if 500,000 marks are subscribed.

In order to remove the apparently authorized objection that we should by the formation of this company possibly injure the very extensive petroleum trade of Bremen with America, we will add one more observation. Even if this were possible, which we do not deny, this result could only be brought about after a long time, and then only partly, on account of the enormous quantity of petroleum which Germany consumes. At all events, this would only be the case in a smaller measure than if this enterprise were undertaken in another country. While under Bremen management all the experiences made in this, the largest European market, cannot but be of great advantage to this undertaking. We believe ourselves, therefore, justified to induce parties to interest themselves in this undertaking by reason of the statutes.

Out of the capital stock of 1,000,000 marks, 200,000 marks are already positively

taken, and the balance of the stock (800,000 marks) can be subscribed at the offices of the undersigned members of the committee on the 23d and 24th of March; they can, however, be closed before the expiration of this term, if the stock capital is fully subscribed to. The subscription is understood at par.

At the time of subscribing, 10 per cent. of the amount is to be paid in cash at the place where the subscription is held. As regards the distribution of the amount subscribed to, special notice will be sent to the subscriber as soon as possible after the conclusion of the subscription. If, against expectation, sufficient subscription does not take place, in order to erect the German Petroleum Boring Company, the full amount paid in will be refunded to the subscriber.

The statutes are to be seen or had of the undersigned.

BREMEN, March 18, 1880.

The committee for the formation of the German Petroleum Boring Company.

GEORGE ALBRECHT, firm of J. Lange Sohn's Wwe. & Co.

W. ICHON.

R. LICHTENBERG, firm of Deiterich, Lichtenberg & Co.

H. H. MEIER, firm of H. H. Meier & Co.

CHR. PAPENDIECK, firm of Chr. Papendieck & Co.

JULIUS SMIDT, firm of G. Smidt.

J. G. WOLDE, firm of J. Shultze & Wolde.

IMPORTS OF AMERICAN GOODS AT BREMEN.

REPORT BY CONSUL GRINNELL.

I have the honor to inclose a sketch of the principal imports from the United States at this port for the year 1879, and a comparison with 1878, both from official figures furnished by the Bremen Government.

The imports from the United States are substantially the same in amount in both years, but it is a matter of importance to study the various items, as showing that our people can, by care and attention to the details of preparation and manufactures, supply this empire with the foreign growth and manufactures that it needs, to a far greater extent than hitherto. In cotton yarns, as well as certain medium and lower grades of cotton goods, our spinners and manufacturers should, as I advised the Department in dispatch No. 16 of last October, be able to supply to a great extent the twenty-odd millions of dollars' worth now annually sent here from England, and manufactured from the raw material of our own growth. I will thank the Department to forward me a copy of a circular on this important subject, which I learn from the newspapers is about to be issued.

Of raw cotton, owing to the improvement in commerce, we shipped here nearly \$3,500,000 in excess of 1878. In tobacco, however, owing to the high tariff, we exported nearly \$4,500,000 less than in 1878. Of bacon we shipped \$150,000 more than in 1878; and here I would remark that if more attention were paid to curing and packing, the quantities could be quadrupled and the prices obtained would be much higher. Immense quantities of our hog products are handled here in the best German manner and then sold, at doubled prices, as of German origin.

The list shows a good increase in 1879 of butter, leather, &c.

I shall not have the official figures of the other German port (Hamburg) before October.

W. F. GRINNELL, *Consul*

UNITED STATES CONSULATE,

Bremen, Germany, June 11, 1880.

Statement showing the value of the principal articles exported from the United States to Bremen during the years 1878 and 1879.

Articles.	Value in 1878.	Value in 1879.	Increase.	Decrease.
Cotton.....	\$12,024,402	\$15,966,866	\$3,342,464	
Oil.....	8,278,353	8,135,900		\$142,453
Tobacco.....	7,965,961	3,496,293		4,469,668
Lard.....	2,602,935	2,685,380	82,445	
Bacon.....	1,114,426	1,264,980	150,554	
Indian corn.....	963,891	1,234,900	271,009	
Rye.....	686,155	498,546		187,609
Wheat.....	251,334	479,961	228,627	
Butter.....	228,597	424,536	195,929	
Lumber.....	287,125	269,578		17,547
Leather, tanned.....	149,604	234,503	84,899	
Clover seed.....	184,729	228,428	43,699	
Machines.....	158,661	151,237		7,424
Hardware.....	123,661	75,101		48,560
Wagons.....	7,011	55,198	48,187	
Glassware.....	16,889	40,866	23,977	
Cotton yarns, &c.....	8,889	6,827		2,062
Total principal articles.....	35,652,623	35,251,090	4,471,790	4,573,323

MARYLAND TOBACCO INSPECTION.

REPORT, BY CONSUL GRINNELL, ON THE IMPORTATION OF AMERICAN TOBACCO AT BREMEN, AND ON THE EVILS OF THE MARYLAND TOBACCO INSPECTION.

Referring to the fifth paragraph of the Secretary's circular letter to consuls, &c., of July 1, last, I have the honor, first, to give the importations hither for the six months of the year 1879 and 1880, ending June 30, of American tobacco.

Import of United States tobacco at Bremen from January 1 to June 30, 1880, and 1879, compared.

Years.	Seed leaf.	Virginia.	Kentucky.	Maryland.	Ohio.	Stems.	Total.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
For the year 1880.....	1,581,063	3,395,502	4,681,922	2,035,114	1,245,894	7,544,120	20,483,594
For the year 1879.....	468,758	3,377,164	6,455,998	1,762,824	158,188	5,889,312	18,112,244

Giving an increase in 1880 of 2,371,340 pounds.

It is gratifying to see this handsome increase in 1880, and, although sales are small just now, prices are remarkably firm, and this in spite of the greatly increased domestic growth here this year, which the enhanced duties on all foreign tobacco encouraged. Besides, Germany, Belgium, Sweden, Switzerland, and Portugal have recently increased their tariff on foreign tobacco. However it may be with the last-named countries, Germany, whatever figure her own production may reach, must import very largely of our tobaccos to mix with and render salable her own weak and flavorless plant; and all we have to do is to deal honorably with her importers, and stamp out all attempts at trickery and charlatanism on the part of our growers, sellers, and inspectors.

Of our large commerce with Bremen, tobacco, the third article in value—being exceeded only by cotton and petroleum—is probably the first in importance, considering the number of people employed and maintained in the handling and care, its sale, delivery, and manufacture.

The merchants of Bremen have a reputation for probity, for fair dealing and strict integrity, as well as business sagacity and untiring industry, perhaps unsurpassed by those of any city in the world. Young

men are sent to Bremen from England, Holland, Spain, Russia, &c., and apprenticed for from three to four years to mercantile firms here; and such a course here is a certain passport to lucrative employment. A certain retired merchant some years since opened an office to educate young men to commerce, and the six or eight boys he accepted paid enough for the privilege to support the merchant handsomely.

With this preface I beg to submit the result of my interviews with four or five of the oldest and wealthiest firms who deal exclusively in tobacco, and as regards the complaints of these against the State inspector of Maryland, who is daily injuring our good name, I would join in requesting the abatement of this grievance and have Maryland tobacco sampled as the tobacco of our other States. This State declares that no tobacco grown on its soil can leave its boundaries without first being inspected by persons appointed by the governor. It is openly asserted that persons have been named inspectors, and have drawn the salary for years, who scarcely knew what a hogshead of tobacco was, and who rarely went to the inspection warehouse. The samples "drawn" by these government inspectors are nearly always greatly superior to the true contents of the hogsheads, when, on being sold here, they are properly sampled by disinterested experts; and then, to crown all, there is no recourse, no recovery possible. In all other inspections—those of New York, Lynchburg, Clarksville, Paducah, New Orleans, &c.—a return of such samples showing an inferiority, accompanied by proper proofs, compels the seller to refund the difference of the lot, in so far as it is of less value than the original samples of the inspector, the difference determined by experts at the place of original sale or inspection. This difference can always be collected; but in the case of the "warehouse inspections" of the State of Maryland, a return of the samples "drawn" here from the same hogsheads, showing, with proper proofs, whatever inferiority it may be, brings not only no redress, but no notice of the receipt of the complaint. In at least one case the governor of Maryland has been appealed to; but although the claim—made by one of the largest firms here, on 400 hogsheads sold on Maryland samples to the French Government (*regie*), and the great inferiority of the goods verified in every possible way—is a large one, the firm can get no satisfaction. The chamber of commerce even, whose president is a member of the firm in question, has also memorialized the governor in vain.

These complaints of Maryland inspection are not confined to one or two firms, but are general here; so general that it is exceedingly difficult to make sales of this tobacco at all. The seller must allow claims properly made upon him, and therefore most often, instead of an apparent small profit, there is an actual large loss.

That this vicious system is in direct opposition to the emphasized and iterated views of the Secretary of State of the absolute necessity for a strict course of honor and fair dealing in our international intercourse, which are heartily indorsed by every honorable American, is another reason for placing this matter before the Department without further delay.

WILLIAM F. GRINNELL,
Consul.

UNITED STATES CONSULATE,

Bremen, Germany, October 13, 1880.

IMPORTS AT BREMEN FROM THE UNITED STATES.

REPORT, BY CONSUL GRINNELL, OF THE IMPORTS AT BREMEN FROM THE UNITED STATES DURING THE FIRST SIX MONTHS OF 1880.

I have been enabled, with the outlay of some money, to get the quantities and values of our principal exports hither for the first half of the current year, and give them below separately, with the exception of tobacco, the figures for which article I had the honor of transmitting in my dispatch No. 44 of the 13th instant. I place them in the order of their value, and omit the odd figures.

IMPORTS OF RAW COTTON.

January 1 to June 30, 1880, 80,000,000 pounds; value, \$8,800,000.

On this product, and its sale here, there is little to remark. Bremen imports about double the cotton that Hamburg does. It supplies the hundreds of little mills in Austrian Tyrol, Switzerland, Bavaria, the Rhenish Province, &c. The stock here is trifling at all times, now about 20,000 bales.

PETROLEUM.

Imports, 245,000,000 kilograms (each 2 pounds); value, \$6,100,000.

Germany consumes of this important product about \$15,000,000 per year. Bremen is the greatest market, and now holds 750,000 barrels out of a total of less than 1,000,000 barrels in Northern Europe. It is sold by the "50 kilos," equivalent to our hundred-weight; a barrel weighs about 280 pounds, giving a value at current prices of about \$6.30 per barrel. One year ago it sold for \$3.90 per barrel.

The stock is all stored at Bremerhaven in large one-storied sheds built for the purpose, and whence it is shipped to the interior, never coming at all to Bremen; this, indeed, is the case with a large proportion of the merchandise sold here. There is some disquietude among the merchants dealing in petroleum, for the following reasons: Our "burning test," which is 110° Fahr., is perfectly safe, and has proved satisfactory to the trade and consumers; but the German Government have now under consideration two new systems of testing the oil, viz, Ebel's and Bernstein's, of which, if it selects, as is feared, Ebel's 72°, which is the present English standard (equal to our 120° Fahr.), it will throw out of the market all the stock here which is 110° Fahr. It is hoped that the Imperial Government will accept instead the Bernstein standard, as his thermometer, ranking 33°, will permit our present standard to enter. At this 110° Fahr. we refine from 100 barrels of crude oil 75 barrels of refined, but by Ebel's 72° test only 60 barrels could be obtained from that quantity; hence, it would render the price too high for a heavy German consumption, the German being poorer and by necessity more economical than the peasants of other nations.

BACON.

Same period, imports, 9,400,000 pounds; value, \$900,000.

There has been a manifest improvement in the quality of American bacon during the present and last year. The chief houses here have, during this period, ordered direct from Chicago, the New York inspectors having seriously injured that market, by passing spoiled bacon over and over again.

The importations of 1879 were 44,000 boxes; and of the present year now closing—the bacon year begins November 1—only 23,000 boxes. This is, perhaps, owing partially to the enhanced duty of $1\frac{1}{2}$ cents per pound, but largely also to the fact that speculators have forced up the price at Chicago to a point nearly double that of eighteen months ago. If present prices are maintained Germany will not, it is said, import 15,000 boxes the coming year. The German peasants, the great consumers of bacon, will buy and eat bacon at 6 to 7 cents per pound, but at 11 cents, the present price, they are not able to buy, and will substitute other food, vegetables, &c. This very high price also stimulates production of hog products here. Already the small farmers have largely increased their raising.

LARD.

Same period, imports, 17,700,000 pounds; value, \$1,750,000.

The remarks in the preceding article apply with great force to lard. Bremen has imported less by nearly three and a half million pounds than during the first six months of 1879.

CALIFORNIA WINE.

The first cargo which ever entered this port arrived in the harbor of Bremen (Bremerhaven) on the fiftieth anniversary of the opening of that harbor, about one month since. It was considered a good omen. Hopes were entertained that a large and profitable business would grow out of this venture, so happily arrived; but now that the cargo has been stored and partially recovered from the effects of the five months' voyage, while preparations are made for sampling it, and the quantity stated to be 90,000 gallons, and the price-list shown, the outcry is general that it is altogether too high in price; that what was expected was a heavy, cheap wine, to lengthen and give tone to the thin wines of well-known growths. One of the owners, now here, states that, as the lot is a very large one, and already in store 40 miles from harbor, there is a feeling among the merchants and dealers that it *must* be sold here, and they hope to get it at their own price.

This wine [he remarks] is not made or offered for the purpose of giving tone to other wines; it stands on its merits; it is from three to five years old, and has been most carefully handled during this period. It will be returned to the United States if need be, or it may be sold in other countries; but it will not be sacrificed, for that would ruin all chances of further business for years to come.

BUSINESS UNEASINESS.

Business in Bremen is somewhat curtailed, owing to the fear that Prince Bismarck may bring forward some impracticable measure in Parliament. That he will include the two remaining Hanse towns, Bremen and Hamburg, in the Zollverein (customs district) is a foregone conclusion, but while it is hanging over their heads merchants are uneasy; and his assuming new powers as minister of commerce renders them still further disinclined to enter into large engagements.

Yet the year thus far has been a fairly good one, and, if the prices of our products are not driven up and kept up to too high a point by an unhealthy speculation, I hope to see our imports at this port 50 per cent. larger next year to bring them to \$50,000,000.

WILLIAM F. GRINNELL, *Consul.*

UNITED STATES CONSULATE,

Bremen, Germany, October 27, 1880.

COSMOS FIBER OR VEGETABLE WOOL.

EXTRACT FROM THE ANNUAL REPORT FOR 1880, OF CONSUL POTTER, OF CRELFELD, GERMANY.

H. Lewis, esq., United States consular agent at Düsseldorf, communicates the following information concerning a remarkable discovery recently developed in that city, and which consists in reducing a certain vegetable substance into a fiber which can be successfully used as a substitute for wool or flax, and is called

COSMOS FIBER.

This important discovery may be regarded as another triumph of the science of chemistry. This process of producing wool from a vegetable fiber is the invention of A. E. Neumann, a Hungarian by birth, who has covered his discovery with patents in all civilized countries. The general adaptation of this material to the manufacture of textile fabrics can hardly be questioned, and must be regarded by those engaged in textile industries as a revelation that may lead to results of the highest public importance.

It appears that Mr. Neumann, as stated by himself, after many years' experimenting, discovered a chemical process by which the fundamental difference between vegetable and animal fiber is removed. It is well known that the difficulty in mixing wool with cotton and other vegetable fibers for textile purposes arises from the fact that both materials cannot be homogeneously dyed and milled, or fulled.

The cause of this difficulty is to be sought for in the different natural structure of the fibers, the vegetable fiber being straight and smooth, while the animal fiber is curly and crinkled. The chief point in the invention of Mr. Neumann consists in this: that, by the agency of certain chemical substances, the vegetable fiber is so efficiently curled and crinkled that it permanently retains its altered structure during all the manipulations of manufacture, and can be dyed with wool, taking readily the same and equally fast colors, by one and the same process. The importance of the invention is obvious when it is remembered that the cost of producing this fiber is but a small fraction of the cost of sheep's wool. It produces a material vastly superior to shoddy, and is not only much cheaper, but is also capable of many more and important uses in the manufacture of cloths, blankets, flannels, hosiery, and many other articles, and is strong and durable, as will be seen on examination of samples herewith forwarded.*

The only manufacturer of the new invention in Europe up to the present date has been the Cosmos Fibre Company of Düsseldorf; but new companies are now being formed for manufacturing cosmos cloth in England, France, Belgium, and also in Algiers. The results hitherto obtained are very promising. Samples of cloth made wholly or partly from the "cosmos fiber" have been presented for inspection, which, in color, fineness, homogeneousness, and strength of the fiber, will stand the severest criticism. The colors in the samples exhibited, and which consisted of two-thirds of fiber and one-third wool, were brilliant and

* Samples in Department of State.

perfectly blended, and experts would find it very difficult to tell which was wool or vegetable fiber. Many manufacturers in Germany, France, Belgium, and Italy are taking a lively interest in the new invention, and are preparing to introduce it into their woolen manufactories.

Another invention, the property of the same company, is apparently of equal importance to textile industries. By this discovery or invention the fiber of the ramie, or rhea plant (*Urtica utilis*), which grows wild in immense districts in British and Dutch India and the French Algerian colonies, can be readily utilized in the manufacture of linen fabrics. The English Government has long recognized the value of this plant, and has offered a premium of \$25,000 for the discovery of a process which will successfully remove the woody and resinous substance of the plant, and leave only a clean fiber. This premium has not yet been awarded, but it is expected that the inventor of the process under consideration will be the fortunate recipient.

Specimens are shown of the partly prepared "rhea stalks," the lower end of which has been preserved in its natural state while the upper prepared part shows a silky, long-stapled fiber of great strength, and which is capable of being treated in the same manner as flax. It appears probable, in view of the experiments so successfully made, that in this vegetable fiber a fair substitute has been discovered for wool, coarse silk, and linen, and which, according to the declarations of the inventor, can be produced at a fraction of the cost of the latter material, and, so far as linen and wool are concerned, of a quality quite as good.

The consular agent at Düsseldorf reports that he has visited the establishment of the "Cosmos Fibre Company," and has carefully inspected the various processes of manufacture and the goods produced, samples of which with specimens of the raw material are transmitted with this report.

The "ramich," or "rhea plant," is found in great abundance in Algiers, growing wild, and the Düsseldorf Company are about to establish an agency there with the necessary machinery for preparing the fiber, so that it can be shipped in bales instead of bulky bundles in its natural state, as heretofore. The plant grows abundantly in South America and in the southern and western portions of the United States, and is there known as "wild hemp." A specimen of the stem of one of the plants which came from British India is herewith forwarded. When fully grown the plant is more than 6 feet high.

The establishment in Düsseldorf has been in operation about six months, and during that time has produced 150,000 pounds of the fiber ready for spinning. The greater part of this product has been sent to France, Italy, and Belgium, and some to England, where 25, 33, and 50 per cent. of the vegetable fiber has been mixed with wool and worked up into different kinds of cloths which, under tests, have given great satisfaction. It must not be forgotten that this fiber which is mixed with wool, is from the same plant (rhea) that is used for producing a fabric identical with linen. For the latter purpose, however, it is subjected to a different chemical treatment.

The samples forwarded are as follows:

1. Stem of plant, full size, in natural state.
2. Portions of stem of plant with bark removed showing length of fiber.
3. The fiber in its natural color, after chemical preparation.
4. Same, when bleached.
5. Different samples of dyed fiber, wool preparation, showing degrees of fineness.

6. Cloths made from the same, with wool, in various proportions, as per sample cards.

J. F. POTTER, *Consul*.

UNITED STATES CONSULATE,
Crefeld, Germany, November 8, 1880.

NOTE.—The foregoing samples may be seen in the Department of State.

THE AGRICULTURAL UNION OF RHENISH PRUSSIA.

REPORT BY CONSUL POTTER, OF CREFELD.

A brief reference to the organization and objects of this institution may interest and be of possible use to American agriculturists.

This society, which is the largest in Germany, has more than 18,000 members. The managing direction consists of 120 persons, as follows: A president, secretary-general, and treasurer; 14 department directors, for national economy, agriculture and meadow culture, drainage, nursery, and horticulture. Cattle-breeding, horse-breeding, forest culture, garden and fruit culture, breeding and raising silk-worms and bees, fish-breeding, technology, and natural history are branches of culture studied and taught in this institution. There is also a sub-department for machinery and implements. There are 63 local directors and 40 delegates for the local sections. A local section with 250 members has the right of two votes at the meeting of the directors, and elects one delegate. A membership of more than 500 confers the privilege of electing two delegates.

The Union is represented in the "*Landes Oekonomie Kollogium*" for the Kingdom of Prussia, and to which all measures relating to agricultural interests are submitted before they are proposed to legislative bodies. It also sends one delegate to the *Deutsche Landwirthschaftsrath* or "German Agricultural Council."

The seat of the Union is in Bonn, on the Rhine, where the establishment for the trial and examination of seeds, manures, and all kinds of soil is situated, and where every member has the right to have tests made and machines, &c., examined and tried.

Connected with this great Farmers' Union are several agricultural high schools, which may be regarded as a part of the agricultural system of Prussia. The academy at Poppelsdorf is the highest agricultural school in Rhenish Prussia. The schools of this class in Cleve are designed for the sons of the "well-to-do" farmers, and the winter schools at Wülfrath, Büthenbach, Zülfrich, Manderscheid, and Nedderdorf are frequented by the poorer classes. The directors of the five last-mentioned schools are also traveling teachers, and during the summer deliver lectures upon agricultural subjects in the neighboring districts. The Union holds its annual meeting at the same time and place of its annual exhibitions and fairs. These exhibitions are held alternately in localities in the Upper, Middle, and Lower Rhine. Quarterly meetings of the directors are held, in which all questions submitted by local sections are subject to consideration and discussion.

State subsidies.—The state grants to the Union annual subsidies for purposes and in amount as follows:

	Marks.
1. For compensation of traveling teachers, who are at the same time directors of winter schools	15,000 00
2. For agricultural chemical trial station	2,640 00
3. For horse breeding	7,000 00

	Marks.
4. For improved breeds of other animals, viz:	
For cattle	19,200 00
For fat cattle	5,000 00
For stations where bulls are kept	8,000 00
5. For general purposes of the Union, viz:	
For compensation of secretary-general	1,510 00
For business expenses	2,250 00
For maintenance of fish-breeding establishment at Köln	3,000 00
For other and miscellaneous purposes	5,500 00
6. For extraordinary purposes	3,000 00
Total	72,100 00

J. S. POTTER, *Consul.*

UNITED STATES CONSULATE,
Crefeld, Germany, November 8, 1880.

IMPORTATION OF LIVE HOGS FROM THE UNITED STATES INTO GERMANY.

REPORT BY MR. SOHOENLE, COMMERCIAL AGENT AT GEESTEMUNDE-BREMER-HAVEN.

I have the honor to acknowledge the receipt of the Department circular, dated July 1, 1880, and, complying with its instructions, I beg to submit a report, in a condensed form, on the importation of live hogs into Germany from the United States.

In the early spring season of this year the arrival of a small lot of American live hogs on board of one of the steamboats of the North German Lloyd created a good deal of sensation at this port, the appearance of these grunners from the other side of the ocean being quite a novel feature. They were, in the average, in an excellent condition, and were immediately transported by rail to traders at Hanover, where they were offered for sale to butchers at Hanover, Brunswick, Magdeburg, Cassel, and other places in Northern Germany, and found at once willing buyers. At short intervals other shipments of American live hogs made their appearance at this port, and were taken charge of by the same parties from Hanover. The butchers in the above-named cities were eager to avail themselves of purchasing these well-fed and comparatively cheap American hogs. The parties that started the experiment of importing American live hogs into Germany calculated on a loss of 5 per cent. on the voyage. Of the last shipment of 900 hogs forty died during the voyage, being less than 5 per cent., while of the former shipments the loss was considerably smaller, so that the average loss of all the shipments amounted to but $2\frac{1}{2}$ per cent., which is considered trifling, and fell far below the calculation of the interested parties. The enterprise having proved to be successful and profitable beyond expectation, there will be further shipments made to this port, and on a much larger scale. There is already a movement going on amongst the principal pork merchants of Bremerhaven and the neighboring towns to found a stock company for the purpose of enlarging the importations of American live hogs. In a few months this company will have some extensive stalls built at Bremerhaven for the temporary stabling of the hogs after their arrival. It is the intention of the company to establish the main depot and principal market for American hogs at Bremerhaven, where they shall be weighed and then shipped to the different butchers into the interior of the country. It is believed that butchers at Berlin will make great purchases of American hogs, as

several of them have already addressed frequent letters to hog traders at this place, in which they expressed great anxiety to be supplied with that article at the earliest opportunity.

A large amount of capital will undoubtedly be invested in the importation of American hogs into Germany by German pork merchants, and from a venture it may grow in a few years to be a very prominent and profitable feature of our American export trade, and may, in course of time, develop into almost unlimited expansion. One thing, however, should not be overlooked by American dealers, that they should export corn-fed hogs only, as the slop-fed ones are more apt to die during the voyage, and as their yield is necessarily smaller than those of the corn-fed ones. American hog dealers ought to send the best quality of hogs to Germany, in order to gain a sure foothold and to encourage their importation. This importation of American live hogs into Germany will have the tendency to offset to some extent the imperial decree of last June, whereby the importation of American chopped pork and sausages into Germany is prohibited, so that if the Germans are not allowed to utilize the small pieces of the American hogs, then the "whole hog" is to be shipped to them. The American hog having more fat substance and less meat than the German, the suggestion of experienced pork merchants in Germany has been thrown out that it would be a profitable experiment to import a lot of German male hogs into the United States for breeding purposes, in order to produce a mixed breed, which would have a little more meat and less fat—a stock of hogs most desirable in Germany and more salable in German markets. This experiment has been made in Hungary in the last few years, and resulted in a stock of hogs which are now preferred to the long-headed and coarse-boned German hog. The Hungarian mixed breeds always command a somewhat higher price than the common German hog. This suggestion appears to be very sensible and plausible, and, at any rate, would be worth trying. The import duty on live hogs is sixty cents per head.

WOLFGANG SCHOENLE,

Commercial Agent.

GEESTEMUNDE-BREMERHAVEN, GERMANY,
September 30, 1880.

THE WOOL INDUSTRY OF GERMANY.

REPORT BY CONSUL MONTGOMERY, OF THE EXHIBITION OF WOOLEN MANUFACTURES AND INDUSTRY AT LEIPSIC.

The Ausstellung, for the exhibition of German woollen manufactures and industry, which was inaugurated with considerable ceremony on the 1st day of July ultimo, is now a source of no little attraction to the merchants and traders of Saxony, and an object of curiosity to strangers passing through Leipsic. The daily number of visitors does not yet equal expectation, nor is the interest as extended as the nature of the exhibition would seem to insure, but both conditions are accounted for by the fact that midsummer in Germany is never a propitious season for popularizing "fairs," and hence the managers generally content themselves by anticipating the usual fall revival in business activity and the customary influx of interested visitors.

There are two large buildings devoted exclusively to this exhibition. They are connected by an iron bridge spanning the street which sepa-

rates them, thus furnishing every necessary convenience for making a thorough inspection of the two inclosures.

The machinery required to exhibit the various modes and processes for manufacturing goods, weaving, spinning, washing, &c., is driven by three large steam-engines, each having a power equal to fifty horses.

The buildings are systematically divided off into six distinct departments, alphabetically classified, furnishing ample space for 838 exhibitors, all of whom are from places in Prussia and Saxony.

Group A is devoted exclusively to the exhibition of all kinds of made-up textures, and is subdivided into nine departments of made-up goods, amongst which there are 333 separate exhibitors of *cloths*. The other departments exhibit woollen stuffs for ladies' wear; half woollen goods; flannels of all descriptions; furniture stuffs, plushes and velvets; carpets, covers, and shawls; embroideries in wool; trimmings in wool; felt of wool; piano felt, &c.

Group B comprises raw material, consisting of raw wool, washed and combed wool, and artificial wool.

Group C is appropriated to yarns of every variety and texture.

Group D includes materials of different kinds used in manufacturing woollen stuffs, such as chemicals, dyes, and soaps.

Group E comprises 155 machines and other apparatus for manufacturing woollen goods, and includes steam-engines, spinning, weaving, washing, combing, and other machinery now employed in the German manufactories.

Group F contains a large number of drawings and patterns for weaving, which are furnished by the schools in Meerane, Gera, and Crimmitschau, and are very creditable to those institutions. Classified in this same group is quite a respectable amount of literature relating to weaving and spinning, and to the manufacture in general of all kinds of goods for home and foreign markets.

The foregoing completes the list of goods and material on exhibition in this *Ausstellung*. It is considered a very creditable evidence of German ingenuity and industry, and particularly so in cloths and ladies' dress goods—cashmeres—from the manufactories of Greiz and Gera.

In these classes of goods, the display is certainly superior to all former expositions, and presents an encouraging picture of business prosperity throughout this country.

J. EGLINTON MONTGOMERY, *Consul*.

UNITED STATES CONSULATE,
Leipsic, August 23, 1880.

TRADE OF SAXONY WITH THE UNITED STATES.

REPORT BY CONSUL MONTGOMERY, OF LEIPSIC.

The present season has developed such trifling fluctuations in the commercial interests of this city and district that a brief sketch of the actual condition of trade now seems sufficient to confirm their solidity.

THE COTTON AND WOOLEN EXHIBITION.

The great cloth and woollen *Ausstellung*, which was inaugurated with unusual ceremonies on July 1, ultimo, was closed, according to previous announcement, on the 15th of October. In its general results it did not

meet the expectations of those most interested in its success, inasmuch as it failed to develop that activity in this important element of German industry which its projectors had every reason to anticipate. It was, nevertheless, in all respects a most creditable display, and spoke volumes for the skill and ingenuity of native workmen in this special branch of manufactured goods. The large buildings in which the exhibition was held still remain, and may be utilized for other purposes.

THE LEIPSIC FAIR.

The annual "Fall Messe" was opened as usual on the 21st of September, and continued for a period of four weeks. The average number of traders, producers, and dealers was present, and the workmanship of every hamlet in Saxony and the adjacent provinces was represented in the great wilderness of booths which take possession of this city in "Messe" times. The boot and shoe makers, the glass manufacturers, fancy-ware dealers, and woollen-goods traders seem to have had the greatest number of exhibitors, and to have presented the most tempting stalls for passing purchasers. Trade, however, was not very active; on the other hand, appearances indicated an unusual stagnation, and the regiment of local dealers and manufacturers must have returned to their homes fully impressed with the idea that the wonderful facilities of present times for home and foreign traffic have considerably lessened the once undeniable popularity of the famous Leipsic fairs.

TRADE WITH THE UNITED STATES.

So far as regards the present status of trade, as embodying the commercial relations between America and this part of Saxony, I am pleased to report that it maintains a very healthy and encouraging condition. The principal exporters with whom I have conversed upon the subject, whilst confessing that the excitement induced by the Presidential election in America has materially interfered with the usual demand for goods, are unanimous in expressing great confidence in the present sound and profitable state of the market; and further say that, from all sources, the outlook for a steadily increasing activity in trade circles is most encouraging. It may be regarded as a sure index of this feeling of confidence that the principal dealers and exporters of this consular district do not hesitate to avow that they "are doing a very safe and satisfactory business." As the continuance of peace in Europe becomes more and more assured, there is manifest a constantly increasing desire to develop the smallest resources of the country, which cannot fail to prove most beneficial in its general results.

The consular agent at Gera (a city which may be regarded as one of the principal manufacturing centers of Germany) reports that the month of October was the most active he has yet known, and I think this fact may be considered typical of trade in other scarcely less important districts.

J. EGLINTON MONTGOMERY,

Consul.

UNITED STATES CONSULATE,

Leipsic, Saxony, November 1, 1880.

TOBACCO, WINE, HAY, AND HOP CROPS OF BADEN.

REPORT BY CONSUL SMITH, OF MANNHEIM.

I have the honor to report that I have made inquiries regarding the conditions and yield of the tobacco, wine, hay, and hop crops of my district at the present time. The harvest having ended, parties interested in these products will undoubtedly desire some information concerning them.

The quantity of tobacco planted this year was greater than that of last year, and, until August 1, anticipations of a large crop were reasonably indulged in, but, at the beginning of the month, the weather changed, and for several weeks little or no rain fell, proving disastrous to the proper growth of the plants, particularly with reference to that portion required for the manufacture of cigars. The crop is much more suitable for the manufacture of smoking tobacco and snuff.

The yearly time for purchasing tobacco is approaching, and buyers anticipate that, with the newly-imposed tax to be collected for the first time, 10 marks for 50 kilograms, and the poor quality of this year's crop, high prices will not be obtained for it.

The crops of corn, wheat, barley, and oats are somewhat better than last year, but generally small and unsatisfactory.

While the crop of hay is much better in quality than last year, the yield is smaller.

The crop of hops is one-third less than last year, but the quality is very good. The present prices range from 50 to 100 marks for 50 kilograms (100 pounds).

The crop of grapes used for the manufacture of wine is very small; the extremely cold winter was disastrous to the vines, especially to those grown on the low grounds. The weeks of dry, hot weather in August, so injurious to the tobacco crop, proved beneficial to the ripening of the grapes; so the wine of this year will be of good quality, yet the repeated failures of previous years, combined with the small amount produced this year, will undoubtedly lead to higher prices for ordinary grades, such as are needed for common table use.

It will be noticed from the foregoing statements that leaf tobacco for cigars will be needed; that the demand for imported cereals will not be diminished; that the quantity of hay harvested will not lead to an increase of live stock, but rather to a reduction of home stock; that the crop of hops will not lead to exportation, but rather tend towards importation.

The quantity of hops used in Germany, and a falling off of two-thirds of the crop, will lead to importation from same country more highly favored this year in its production of hops.

The quantity of good, high-priced wines manufactured will be small, although the quality will be good, but the prices of common brands will be higher than last year.

EDWARD M. SMITH, *Consul.*

UNITED STATES CONSULATE,
Mannheim, October 5, 1880.

EFFECTS IN EUROPE OF THE REVIVAL OF TRADE IN THE UNITED STATES.*REPORT BY CONSUL WINNER, OF SONNEBERG, GERMANY.*

The struggles and difficulties with which the commercial world has had to contend since 1873, and which have stigmatized this period as the "seven lean years"—a time of general misfortune and distrust, with perturbations of hope and disappointment, during which many once-flourishing industries have succumbed, and only the most solidly-based establishments have been able to survive—are now sensibly lightened, if not altogether overcome. The year 1879, opening with very dark prospects, appears in reality to have been the turning-point toward an era of prosperity, and the long-disused machinery of a flourishing trade is once more in active movement. The change so welcome made itself clearly felt during the closing months of last year, and the renewed life which then manifested itself has gradually permeated one artery of trade and industry after another, until the entire body of commerce has been infused and awakened to exertion.

It is easily to be demonstrated that the predominating impulse to the vigor and energy which the stagnating trade of Germany has received proceeded from the United States. In consequence of the short harvests in Europe in 1879, and the resulting heavy exports from the United States of breadstuffs and other staples, causing so great an influx of money, by way of payment, the consuming power of the people of the United States was so increased that the demand could not be satisfied by the home manufacturers and producers. Recourse was had, therefore, to foreign lands, in order that the somewhat sudden and unexpected wants of the American markets might be met, and the export statistics of almost every United States consulate in Europe show that an enormous increase has taken place during the last twelvemonth in the amount of goods of every variety which are ordinarily exported to America, as well as in those articles which, as a rule, are mainly supplied by home manufacturers.

Indeed, now, more than at any other time, Europe is compelled to regard the United States as one of the most important factors in her own industrial development. The enormous exports which were made last year from the United States, especially in grain, live animals, and provisions, in all likelihood will go on permanently increasing. By the rapid extension of our railway system, the ten large grain-growing States of the Union are increasing so fast in population and ability to produce the cereals which Europe wants, that the experience of last year is likely to be common, and the United States must be looked to as the chief source of European supply, not only in years when the harvests are short, but at all other times. Certainly this must be the case in Germany, where, from various causes, her people have been gradually withdrawn from agricultural pursuits, until she is now a grain-importing instead of a grain-exporting country, as she was, to some extent, twelve years ago.

At the same time that the United States is supplying Europe with breadstuffs and provisions, we are surely emancipating ourselves from dependence upon her for almost every sort of manufactured goods by strengthening our iron and other metal industries, developing our silk, cotton, woolen, leather, paper, fancy goods, and other manufactures,

and now compete with her in the consumption of raw stuffs and colonial merchandise. This last fact would seem to be proved by the higher prices which have everywhere ruled during the past year for almost all sorts of raw materials, half manufactured, and articles of consumption. The price of tea, coffee, imported sugar, tallow, hemp, jute, flax, linseed, &c., has advanced in Germany, and the higher prices of these and other commodities are attributed to the great demand for them in the United States, growing out of the new life imparted to every branch of industry by the heavy influx of gold from Europe.

The first branches of trade in Germany to feel the vivifying impetus given by the United States were the iron, coal, leather, cotton, and wool industries, the activity in which caused a feeling of encouragement and hope toward the close of 1879, and the prognostications of that time have been confirmed thus far during the current year. The greatly improved receipts of all the railroads are sufficient evidence of the growth of business.

But in spite of the favorable turn which prospects have taken, there is still a feeling of doubt underlying all; lest this present happy conjuncture of affairs shall prove exceptional and fleeting. All Europe marvels at the material wealth and prosperity of the United States—at our rapid and brilliant advance to the front rank among commercial nations—at the ability of our people to supply not only their own wants, but to send from their abundant surplus to other nations whose heritage is not so fair. It is seen and confessed that the material prosperity of the United States is closely linked with the best interests of the manufacturing and commercial classes of Germany and of other countries—a fact which the course of trade for some time past has demonstrated. Just in proportion as we thrive and increase at home are we able to engage in profitable business abroad—the exchange of commodities with other nations. Admitting all this, there is, nevertheless, a feeling of ill-concealed jealousy and amazed regret in Germany that the great Republic of the West is now able not only to supply other countries with the raw productions of commerce, but, having served her apprenticeship honorably in almost all the branches of skilled labor, has become a competitor in foreign markets with the time-honored manufacturing establishments of Europe. This is looked upon, to some extent, as an encroachment upon vested rights, which will only be forgiven as the commercial relations of the two countries inexorably adjust themselves to the new order of affairs.

EXPORTS FROM THE SONNEBERG DISTRICT.

The people of this consular district have shared quite fully in the renewed prosperity, and are duly inspired by the demands which have been made for their manufactured goods on the part of the United States. From a comparison of the quarterly tables of exports which are made up at this consulate, it is apparent that there has been a great increase of sales in every branch of manufactures. The year 1879 showed an advance of over \$210,000 in the value of exports to the United States, as compared with 1878; but the first three quarters alone of the commercial year ending September 30, 1880, exhibit a striking advance upon the figures given above. The increase in the value of exports hence to the United States during the three quarters ended June 30, 1880, amounted to about \$340,000 above the total for the corresponding period of the previous year. The comparison of the current quarter, as will be seen in due course by the annual table of exports about to be completed, will show an increase in the same large pro-

portion, the months of July and August alone giving a total of only about \$35,000 less than the aggregate of the quarter ending September 30, 1879. A comparison of the values of the different articles exported from this consular district to the United States during the three quarters of the current year, for which the tables are complete, with the corresponding periods of the previous twelve months, shows that not a single class of exports has remained unaffected by the favorable impulse which trade has received. In toys, the increase amounted to \$110,000; in cotton hosiery (entirely from one establishment) to over \$92,000, and in china-ware to about \$77,000.

HENRY J. WINSER, *Consul*.

UNITED STATES CONSULATE,
Sonneberg, Germany, October 1, 1880.

GERMAN VS. AMERICAN AGRICULTURE.

REPORT BY CONSUL WINSER, OF SONNEBERG.

AGRICULTURE AND CROPS.

Although there are many fruitful valleys within the limits of this consular district, and not an inch of soil adapted to the growing of crops is left uncultivated, farming is nowhere followed on a very large scale, and the products of agriculture scarcely supply the home demand. Since the mighty liberal reaction of a generation or more ago, and the abolishment of feudal abuses and exactions, there has been absolute freedom from restrictions in the transfer and acquisition of land, and the people show a determination to acquire even the smallest portion of the soil, even on the part of persons who do not depend upon agriculture for support. At present the principal part of the soil in Thuringia is owned by small peasant proprietors, and there would seem to be no practical limit to the division and subdivision. As an instance may be cited the recent forced auction sale at the village of Haina, in Saxe-Meiningen, of ninety-one parcels of land—field, meadow, and wood—at the assessed value of \$536.40, and among these plots were no less than sixty-three lots valued at \$2.50 or less per lot. With such an infinitesimal division of land, it would be strange if the cultivation of the soil were more profitable, and it is still more strange that this extreme subdivision of the land is not only regarded with favor by the peasantry, but is advocated with enthusiasm by the educated classes. In this connection I quote the views of a large landed proprietor, who farms extensively. In reply to my request for information, he wrote:

The new tariff, as it applies to grain, may increase the revenues of the empire, as was calculated, but its effect on the welfare of the agricultural class will scarcely be felt. As long as the American systematic despoilment of the soil continues there will be no great increase in German farming. We cannot compete with you, because our soil cannot be compared in point of fertility with that of your prairies, nor even with that of Hungary or France, and our climate is not favorable for agriculture. As you know, every little plot of ground here is cultivated by its owner, who can never compete with the farming on a grand scale which goes on in the United States. Perhaps in the course of a thousand years or so America may present the same aspect which now distinguishes Germany, viz, her immense wheat fields may be divided and subdivided among thousands of small farming families. If so, you will have a peasantry; and then, according to the German view, which I fully share, you can be congratulated upon the possession of that element in your population which forms the strongest bulwark for the peace and prosperity of the land. Germany has found this out by experience during the last thirty years, and her advice to the United

States is to keep her lands out of the grasp of corporations and large holders—lease it in large tracts for a time, if necessary, but let it revert eventually into the hands of small proprietors. The complaint of some years past of a lack of farm laborers in Germany is no more heard. Driven by trade depression from the factories, many operatives have found employment in agriculture, and German farming has revived to some extent by this access of willing hands for the plough and the flail. Harvest laborers receive from 25, to 37 cents per day, with board; and female harvesters get from 18 to 24 cents a day, with board. Farm servants, employed by the year, are paid (males) from \$30 to \$40 when found, and females from \$25 to \$28, being about the same rates which were given in the flush times, between 1870 and 1874. The wages of day workers have receded an iota, and while there are large districts in Germany where the people are in a deplorable state of poverty, there are other and more fertile districts which would afford employment to laborers if only they would work for lower wages. In fact the wages of farm laborers in most parts of Germany are much too high to admit of great improvements in the method of cultivation or in the mode of living. Small farmers—peasants who have just enough land for their own support—live and work still in the same way that their forefathers did. Since the reduction of freight rates on the German railroads the price of grain has cheapened greatly, particularly wheat from the United States, and the small farmer cannot allow himself the least extravagance. The land is cut up into small holdings, and there are thousands of small proprietors who cannot afford to buy even a hay or straw-cutting machine, doing this work by hand. The large farmers (owners of estates and tenants of crown lands) must also strive hard to make both ends meet. Where wages are high they must resort to machinery in order to exist. I think it a great pity that American farming machinery is not yet sufficiently known in Germany. Your manufacturers should have a great many more agents here, not only in the large cities but in the small towns. Samples of machinery and tools could pass from agent to agent throughout Thuringia. It should be borne in mind that even those small farmers who are in the position to buy agricultural machinery and implements seldom or never visit the large towns where such are to be seen.

This letter from an intelligent gentleman I have quoted entire, and am able very heartily to indorse his practical views as to the best method of bringing our agricultural machinery and implements to the notice of the small farmers. Our manufacturers might appoint an agent in every place in this consular district where periodical fairs are held. These fairs or markets are held from four to five times a year in most of the small towns of Thuringia, attracting the peasants and small farmers from the neighboring country and affording them the opportunity to sell their products and lay in supplies. Beyond this visit to the stated market in the nearest town, the observation of the ordinary peasant proprietor rarely extends. His chance, therefore, of finding out the merits of novel and useful labor-saving inventions is quite limited. Our manufacturers, not only of agricultural machinery and tools but of other wares which are salable in Germany, should try the plan suggested. They ought to have agents in such small cities as Coburg, Hildburghausen, Salzungen, Sonneberg, Saalfeld, Poessneck, Neustadt, Meiningen, Rudolstadt, Weimar, and Eisenach, or in any place of from 5,000 to 15,000 inhabitants where markets are periodically held, as well as in Gotha and Erfurt and other large cities. Respectable, trustworthy agents could be found in every small town in this consular district.

Reverting once more to the subdivision of the soil of Thuringia into small holdings, it may be said that the owner of a farm of 12 hectares (28 acres) of fields and meadows is just able to support himself and a small family in a tolerable degree of independence. Even then his condition is scarcely better than that of an ordinary day laborer, unless, indeed, his farm be free of debt, which is seldom the case. The peasant proprietor of a farm of less than 28 acres must have other resources than those yielded by agriculture in order to exist. Both he and his family must work at one of the many local industries which have given the manufactures of Thuringia a wide celebrity. The earnings for the factory work form the chief source of income and those yielded by culti-

vating the soil are supplementary, though never to be dispensed with. The average earnings of the entire laboring population are comparatively small, and their wants are correspondingly modest. There are here no large centers of population and commerce, and consequently no great fluctuation in the amount of work and wages, as would be the case if the people were more under the influence of social and political agitation and commercial depression and activity. Potatoes are the chief article of consumption, and the uncertainty of the crop often occasions great distress to those who depend so largely upon it.

The system of agriculture commonly followed is what is called the "three fallow," but this is not strictly adhered to in regard to the rotation of crops. During the summer, perhaps, three-quarters of the fallow-land is cropped with potatoes, cabbages, turnips, clover, pease, or vetches; and so, under the name of a "three-fallow system," a six or even nine fold rotation is practiced, upon the general principle that a summer crop must follow a winter crop. Surface plowing is the rule, the depth not exceeding from three to six inches. The old Thuringia or Franconian plow—an implement on wheels with a straight share—is chiefly used, and the shallow furrows are raked with the old-fashioned Bohemian or Saxon horse-rake. Both plow and rake are worked either by two cows, two oxen, or two horses yoked abreast. A strong pair can plow from 1 to 1½ acres a day. Plowing begins during the first week in April and sometimes goes on until the end of November. The native wooden harrow has been now generally superseded by an iron zigzag harrow. Steam plowing is unknown, although for several years past steam thrashing machines have been used on the crown farms at Coburg and elsewhere; and sometimes in the neighborhood of the towns the small farmers are able to hire a steam thrasher in turn from some enterprising dealer, who finds his profit in owning one for this purpose. The rhythmic thud of the old hand flail is heard, however, above all other sounds during the month of August. Reaping machines are not in general use; indeed, they are very rarely seen, the scythe and hand sickle being preferred as doing less damage to the grain and preserving the under crop of clover. Summer sowing lasts for six weeks from the beginning of April. Autumn sowing of wheat and rye begins on the 1st of September and ends the middle of October.

Harvesting begins on the 1st of July and lasts till the end of August, and for oats, roots, and vetches until the middle of September. The hay crop is harvested between the 15th of June and the 15th of July, and lucerne clover is cut for green fodder about the middle of May. Red clover is taken in a month later. As a rule, each acre receives every three years eight cartloads of stable manure of 15 cwt. each. Besides stable manure, guano, soap ashes, and carbonate of lime are employed, and sulphate of lime is in general use for clover lands. In some districts the grass lands owe their great fertility to the yearly inundation of the streams, which leave rich deposits behind them. Drainage is now receiving more attention, and improved methods are sought after.

The horned cattle of the country excel for draught purposes, being quick and possessing great power of endurance. They are always stall-fed. The trade in live stock is mainly conducted through the markets of Schweinfurt and Magdeburg, and never directly with foreign countries. Sheep have considerably diminished in number in consequence of the subdivision of the land and the abolition of the old grazing rights. Pigs are reared largely, but exclusively for home consumption. Goats are kept by every cottager, as well as fowls, ducks, geese, and

pigeons. Bee-culture prevails quite largely, the wax finding a ready sale at the doll-makers.

Since the general subdivision of the soil the increase in the value of land has been very marked and pauperism has greatly diminished. In considering the condition of German agriculture it must, however, not be forgotten that the nation is passing through a period of great political and social changes, and that she has to contend with a strong competition on the part of foreign producers. Ten or twelve years ago her export of agricultural products exceeded her imports and she might have been termed an agricultural country. Since that time the local restrictions which affected the development of her industrial and manufacturing energies have been relaxed, and she has, year after year, assumed more and more the character of a manufacturing country, while the tillers of the soil have been gradually withdrawn into the workshop and the factory. Lack of adequate knowledge of the principles of modern farming, notoriously characteristic of the German people, has doubtless caused a large waste of capital in some of her agricultural districts, and the condition of her agricultural population can scarcely be improved until she adopts and practices the scientific plans of farming which, in these days, will alone make the culture of the soil profitable.

The exceptionally dry weather in April and May of the current year, often accompanied by strong east winds, kept back the winter crops, and the prospect in this region at the end of May was very poor. Heavy rains subsequently worked favorably upon all the crops, excepting barley, oats, and grass, which did not recover from the drought. The first cutting of grass yielded scarcely more than half a harvest. Moreover, the quality was not good, except in the moist meadows of the higher lands. The summer weather, however, was favorable on the whole, although there were frequent thunder storms in the latter part of July and the first half of August, which did much damage in some localities and militated against the quality of the grain. The crops in the valleys first harvested proved of average yield and quality, but the rain again intervening before the later regions could gather in the harvest, much injury was suffered from mildew and rust. Potatoes also, in some regions, did not turn out well on account of the heavy rains; and, on the whole, the crops of Thuringia this year may safely be classed as from "fair to middling."

HENRY J. WINSER, *Consul.*

UNITED STATES CONSULATE,
Sonneberg, Germany, October 1, 1880.

GERMAN TARIFF, TAXATION, AND EMIGRATION.

REPORT BY CONSUL WINSER, OF SONNEBERG.

The question as to how far the new German tariff has contributed to the more satisfactory state of trade is generally discussed; but it is altogether too early to give an exact opinion upon so weighty a matter. Indeed, both the advocates and the opponents of the new tariff, in the Imperial Parliament and outside of it, concur in the belief that, after so brief an interval since the tariff was put in force, it is impossible to judge at present whether it will work favorably or the reverse upon the business interests of the nation. The necessary experience must first be obtained. It will be remembered that the new tariff went into operation

on the 31st of May, 1879, with regard to raw iron of every sort; on the 5th of July, 1879, for groceries and other articles of consumption, as well as for petroleum; and on the 17th of July for tobacco and the manufactures thereof. Before the introduction of the new duties speculation in each of these commodities was quite rife, as the customs statistics show, and large quantities of the merchandise so soon to be affected were brought into Germany before the closing of the door. There were immense stocks of dutiable foreign goods on hand, therefore, when the tariff came into operation, and the speculation was principally carried on in raw, scrap, and bar iron and the manufactures thereof; in tin ware, wine, tobacco, lard, tallow, petroleum, cotton, wool, leather, palm oil, and other raw materials. This speculation was continued in those articles upon which the increase of duty was fixed for the first of January, 1880. The inevitable result of the excessive imports of dutiable merchandise during several months was to reduce these imports below the normal quantities subsequently. The result of the speculation of last year, therefore, has been to frustrate the expectations of the protectionists, who counted securely upon an immediate improvement in the condition of home industries, while the anticipated advantage to the exchequer of the empire, for the same reason, has not been secured. Likely enough the expected favorable results, as well as the feared unfavorable consequences, of the tariff have been overrated. The protection of German industries is only one of the factors which enters into the many-sided question of fostering the prosperity of the manufacturing classes, the hoped-for benefits of which policy may be paralyzed if not destroyed by factitious influences that are constantly arising. But particular value is laid upon the tariff as a well-adapted basis upon which to enter upon future commercial conventions, bringing Germany into a more favorable condition in juxtaposition with foreign countries, and enabling her to seek a *quid pro quo* where she makes concessions to her neighbors. The existing commercial conventions between Germany and Austria, France, Belgium, Italy, and Switzerland are only provisional, and the uncertainty respecting their prolongation and ultimate renewal, with modifications, works harmfully upon the German export trade, exerting a more crippling influence the longer it continues.

TAXATION FOR IMPERIAL PURPOSES.

A conference of the finance ministers of the several States of the Empire was held at Coburg towards the end of July last, to discuss and determine upon matters connected with revenue and taxation. The conclusions of the conference have been kept a profound secret, but the result of an interchange of views is said to have been satisfactory. The political and legislative changes which have taken place in Germany during the last decade have greatly increased taxation, and the burden upon the agricultural classes has become almost intolerable. To relieve this state of things, certain reforms in matters of revenue and taxation were announced at the spring session of the Imperial Parliament. Precisely what measures will be introduced as the outcome of this conference it is impossible to say, but many theories are broached and discussed in the public journals as to the course which ought to be pursued. Many persons believe that the introduction of a monopoly in tobacco on the part of the government, similar to that obtaining in France and Austria, is certain to take place. The opposition to a measure of this kind is, however, very strong, because of the immense private interests which would be ruined in consequence of it. There is no doubt that

something must be done very promptly to secure the revenue which growing Imperial necessities seek. On every hand great reluctance is expressed to increase the revenue by enhancing the matricular contributions from the federal states—a scheme which in its initiation ten years ago was declared to be only of a temporary character, and which has always been a source of dissatisfaction because of the inequitable principle upon which it is based. Under this system the agricultural population have to contribute to the support of the Empire a sum which really equals three per cent. of the returns from cultivating the soil. Besides this tax, the agriculturist has to pay a community or parish tax for the maintenance of schools, roads, poor relief, and other purposes, which never is less but often is greater than that levied for Imperial objects; and, in addition to these burdens, the cultivator of the soil, in common with the dweller in the town, is taxed 4 per cent. upon his income when that exceeds \$400 per year; and in cases where incomes fall short of this amount, a class tax is levied, representing from 2 to 3 per cent. of the assessed income. Thus, under the most favorable circumstances, the agriculturist is now taxed to an amount varying from 10 to 12 per cent. of his yearly income. Taking into account, also, the great amount of indirect taxation which is levied in Germany for the support of the Empire, it will be readily understood that the agricultural population is comparatively the worst off, being burdened by taxation the most heavily. There are now good grounds for believing that the conference of the finance ministers at Coburg will result in the creation of an independent revenue for the Empire by increasing the present internal revenue taxes upon the manufacture of sugar, beer, and brandy, and by imposing a tax upon stock-exchange transactions, thus putting a part of the proceeds from these direct taxes at the disposal of the federal states, and enabling them to remit the land tax to their people, so relieving the soil of its burden except to the extent which may be necessary for the local needs of the parishes or communities.

EMIGRATION.

The large increase in emigration to the United States from Germany which has taken place within the past year is attributed by a portion of the public press to the unsatisfactory condition of the agricultural classes and as indicating a widespread discontent. While it cannot be disputed that the arrest of agricultural development, compulsory military service, and burdensome taxation in Germany have exerted a powerful influence in determining the decision of many emigrants, another fact in connection with the subject must have due weight. It must not be forgotten that during the preceding five years, when business affairs in the United States were so generally depressed, the stream of emigration receded very far below its ordinary volume, and that the increase has been coincident with the recovery of business prospects. The great revival in emigration, therefore, may only represent the normal number of persons who would have sought homes in the United States during the last few years if the outlook had been more encouraging.

HENRY J. WINSER, *Consul*.

UNITED STATES CONSULATE,
Sonneberg, Germany, October 1, 1880.

AMERICAN APPLES IN GERMANY.

REPORT BY CONSUL WINNER, OF SONNEBERG.

I hasten to acquaint the Department with the fact that an experimental shipment of fresh apples from the United States direct to this port of Germany arrived here two days since. The consignment consisted of 112 barrels of "Spitzenbergs," "Baldwins," and "Greenings," in about equal quantities, and I learn that another lot of 100 barrels of the last-named variety are now in transit. In less than twenty-four hours after the delivery of the apples at Coburg every barrel was sold at from \$4.50 to \$5 per barrel, according to quality, and the demand was very far from being satisfied.

This venture in apples was made by the firm of Messrs. Oscar Strasburger & Co., of New York, and was undertaken in view of the short crop of this fruit last season in Germany. The gratifying success which has attended this experiment will doubtless justify its repetition, from a business point of observation, whenever the opportunity shall again present itself.

This shipment of apples was just three weeks on the way from New York, via Bremen, to the center of Germany. Of the three varieties forwarded, the "Baldwins" arrived in almost perfect condition; the "Greenings" also turned out satisfactorily; but, on an average, so far as heard from, one-third of each barrel of "Spitzenbergs" was spoiled. The inference would therefore seem to be that of the three varieties of apples in question, the "Baldwins" and "Greenings" are best adapted for export, requiring simply that the fruit shall be sound when placed in the barrel, the flavor and aroma of the "Baldwins" leaving nothing to be desired. The "Spitzenbergs," also a good kind, would appear to be too tender to bear the long voyage, unless, indeed, each apple should be carefully enveloped in tissue paper. This would add somewhat to the cost, and, perhaps, the plan could only be adopted with profit in connection with choicer varieties of this fruit.

The novelty of this importation of American apples has caused the people here to open their eyes in mild amazement. Since it became known that the shipment was on the way the croakers have been quite active in disparaging the enterprise. I have heard frequent remarks about the wildness of the idea. It was asserted in the first place that apples could not be transported so far in good order, and even if this difficulty, perchance, should be surmounted, it has been "botanically demonstrated" that all American fruits, apples included, had neither the taste nor aroma which characterizes European fruits. But I venture to say that the good people of Southern Germany have never tasted better apples than those of the shipment in question, which is not pretended to have consisted of anything but ordinary good varieties, and which was really a benefaction, in view of the fact that the markets this season are destitute of everything like fruit which is not sour and shriveled.

Last evening some of the American apples were exhibited at a meeting of the Coburg Horticultural Society, and, I am told, were in general highly commended for their superiority in flavor, mellowness, and aroma to the native varieties, although great complaint was made at the careless packing for so long a journey.

The German tariff imposes no duty upon fresh apples, and I believe there would always be a demand in this part of Germany for good American varieties of prime quality, provided the fruit was so packed as to reduce the loss by decay to a minimum and prices could be kept within reasonable limits. The best apples in point of appearance and taste and general excellence which are sold in this neighborhood are produced in the Tyrol, and cost at retail ordinarily from 2½ to 5 cents each in United States money.

H. J. WINSER, *Consul.*

UNITED STATES CONSULATE,
Sonneberg, Germany, November 10, 1880.

ENGLISH COMPLAINTS AGAINST AMERICAN TOBACCO PACKING.

[For the completion of the subject of European tobacco complaints, the following extracts from a report, by Consul Jones, of Newcastle-upon-Tyne, on "the tobacco trade in England," published in Vol. I, *Commercial Relations*, for 1879, pp. 209-212, are herewith republished.]

As I have already remarked, English manufacturers complain of the way in which our American-grown tobacco is packed. It is maintained (first) that at most of the plantations "long," "medium," and "short" leaf are promiscuously put up together; and (second) that too much pressure is used in packing hogsheads; all to the detriment of the best interest of American growers and English manufacturers. Confidence is an essential element of all healthy trade; and every means intended to establish and increase this confidence should be used; and unmixed benefit to all honest traders would ensue. It must be borne in mind that there are men on this side of the Atlantic who serve their selfish interest by throwing discredit upon every branch of the American import trade; therefore too much stress cannot be laid upon the self-evident proposition just stated.

The present system of indiscriminate putting up complained of involves a considerable degree of uncertainty as to the quality and character of the tobacco, and imports an element of speculation into the trade which must always prove unsatisfactory to either buyer or seller and injurious to the trade in the end. I examined a hogshead of Virginia leaf at the works, and in the presence of Messrs. Harvey and Davy. It contained "long," "medium," and "short" tobacco, ranging in value from 3d. to 8d. per pound. This indiscriminate packing of the three sizes in one parcel involves a great amount of labor in separating the same, and burdens the trade with unnecessary expense. From the information I received, as well as from careful personal examination of the question, I am convinced that planters who will put up their tobacco in "firsts," "seconds," and "thirds" will at once derive benefit through increased prices on the whole, and lay a foundation for their "brand" that will facilitate their trade and render it still more profitable in the future.

The second ground of complaint is that too much pressure is used in packing the hogsheads. Twelve hundred pounds is frequently pressed into a cask which, in the opinion of the manufacturers, ought not to contain more than a thousand pounds. The consequence is that the leaf or strips are so cemented together that they require an iron bar and mallet to separate them. Great breakage of the leaf is the inevitable result; and the percentage of "shorts," or broken leaf, which can only be used for grinding into snuff, is greatly increased. It is quite true that this breakage might be diminished to a considerable extent by steaming the

tobacco preparatory to separation. But the color of the better class tobacco is darkened by this process, and its value thereby reduced.

Granting that a saving in freight of several hundred pounds per hog-head is effected by the packing under the present system complained of, it is confidently asserted, on the other hand, that the benefit to the manufacturer would enable him to pay for the properly-packed tobacco an enhanced price, which would much more than cover the loss sustained by the exporter in freight.

This statement is made, not merely as the result of the writer's careful investigation, but as the deliberate opinion of the first tobacco brokers in London and Liverpool, and of Mr. Harvey, who has been one of the largest manufacturers in England for upwards of half a century.

The broken tobacco which cannot be used for spinning into "Irish roll" is available for cut tobacco; but a large percentage of "smalls" has to be sold to the snuff-maker, whereby not only is the first cost of the leaf lost, but some of the duty as well is sacrificed, or it must be exported for "drawback" under government regulations; an alternative which involves a sacrifice of 10 per cent. to the manufacturer, not merely upon the prime cost of the tobacco, but upon that amount plus the government duty of 3s. 6d. per pound.

In considering the necessity of economy of the stuff, and the importance of reducing waste to a minimum, our American planters should always have in mind that this duty is added to the first cost of every ounce of tobacco taken out of bond.

This report is respectfully submitted in the belief that it contains suggestions intended to benefit our American exporters as well as the British manufacturers of tobacco.

EVAN R. JONES, *Consul.*

UNITED STATES CONSULATE,
Newcastle-upon-Tyne, England, April 27, 1880.

AMERICAN FRUIT TRADE IN LIVERPOOL.

REPORT, BY CONSUL PACKARD, ON THE TRADE IN AMERICAN FRUIT AT LIVERPOOL, AND ON THE BEST MEANS TO INCREASE THE SAME.

In reply to your circular of the 1st of July, 1880, I have the honor to make the following report of American green fruit and potatoes. Green fruit from the United States has now become an important import from that country into Great Britain. The following table, chiefly apples, shows that such imports have enormously increased during the last six years :

Year.	Bushels.	Total value.	Value per bushel.
1874	157,345	\$421,181	\$2 67
1875	164,160	415,988	2 53
1876	484,197	1,250,321	2 87
1877	336,566	387,336	2 48
1878	864,141	815,809	2 23
1879	734,904	1,536,901	2 09

It is particularly worthy of notice that the increase during 1879 over 1874 has been 577,559 bushels in quantity and \$1,115,720 in value, and that whilst the quantities have increased, the price per bushel has decreased.

For cranberries the demand is increasing. Hitherto it has not been great, but this fruit only requires to become better known to be appreciated. It is usually imported in barrels containing about 100 pounds, and in boxes containing about 40 pounds, the sale price per barrel being from \$6.10 to \$11.95 and per box \$2.43 to \$3.65.

I recommend dealers in this fruit to investigate this market, and for that purpose their inquiries may be made through this office.

Efforts have been from time to time made by merchants here to introduce American peaches, with as yet little or no success. Even if this fruit arrive in good condition (after being in the ice-house on ship-board) it rapidly perishes, and often before it can be put on the market, or worse, before even a market can be found for it. To be salable here, it ought at least to keep sound for 14 days after arrival, so as to be distributable all over the country.

The chief fruit imported from the United States is the apple, which usually begins to arrive about the middle of August, and continues to come till the end of April, but the largest quantities arrive in the month of December, at which time the best price is obtainable.

Those imported are of several varieties, and command prices varying accordingly. The wholesale market price at present is, for—

	Per barrel.
Newton pippins.....	\$3.65 to \$10.34
Blush.....	2.86 to 5.72
Fall pippins.....	2.43 to 3.53
Kings.....	3.22 to 5.23
Baldwins.....	2.55 to 4.98
Greenings.....	2.25 to 3.53

Of course the market is quite variable, according to the supply and demand. To secure the highest quotation, the fruit must have been carefully picked and arrive in perfect condition. Wet and decaying fruit will not bring sufficient to pay cost and charges.

Potatoes have at times been imported, but there has never been much demand for them, the American potato not finding much favor in the English market. This year, the British crop being a very large one, the American potatoes will find little demand, and consequently should not be largely shipped for Great Britain at present.

The freight from New York to Liverpool averages from 85 cents to \$1.22 per barrel, the rate being arranged by the steamship companies at their monthly meetings. At present the rate is 97 cents per barrel. There are landing charges, viz, for dock and town dues 5 cents per package, and master portorage 2 cents per package, with 10 per cent. added.

Fruit from America is usually sold by auction at the market, samples being only on view; the market days being Monday, Wednesday, and Friday.

The broker's charge for conducting the sale is usually at the rate of 2½ per cent. commission and guaranty, exclusive of quay rent, catalogues, &c., the cost of which is a charge against the fruit.

Some of the shippers of fruit prefer to send their consignments for sale to a merchant who takes the whole charge of them upon himself, samples the fruit, attends the broker's sale, and controls it. His charge is usually 5 per cent. commission and guaranty, which includes the broker's commission.

Merchants unacquainted with and not represented in this market, and desirous of shipping merchandise, will, upon application, be furnished by this office with the names of responsible merchants and brokers whose character for fair dealing is well established in their several lines of trade. The fruit brokers furnish the consulate with their account

sales on market days. Should any of the trade in the United States desire prices by cable, this office will furnish them. No charge is made in answering inquiries where no expenditure is required, but letters should inclose stamp for return postage. If cable messages are desired, a code should be furnished and arrangements made for payment of cable charges. The consulate offers the same facilities to merchants desiring to buy in this market.

As the inquiries answered are already very numerous, and increasing enormously the labor of the clerks, it is respectfully submitted that Congress ought, in justice, to restore the \$500 taken from the \$3,000 previously allowed annually this office for clerk hire.

STEPHEN B. PACKARD, *Consul*.

UNITED STATES CONSULATE,
Liverpool, England, October 23, 1880.

CATTLE AND CATTLE TRADE IN GREAT BRITAIN.

REPORT BY CONSUL PACKARD, OF LIVERPOOL.

Notwithstanding the increased restrictions on the importation of cattle into Great Britain, the number of foreign animals imported was larger in 1879 than in the previous year, the total being 1,239,696, as against 1,197,567 in 1878.

From European countries there were received during 1879, 143,187 cattle, 750,469 sheep, 32,591 swine.

From Canada there were landed in 1879, at the ports of Bristol, Glasgow, Liverpool, and London, 157 cargoes of animals, consisting of 25,185 cattle, 73,913 sheep, 3,663 swine, of which 154 cattle, 1,623 sheep, and 249 swine were thrown overboard during the voyage; 21 cattle, 226 sheep, and 3 swine were landed dead; and 4 cattle and 61 sheep had to be slaughtered at the place of landing owing to injuries received in transit.

From the United States there were landed in 1879, at the ports of Bristol, Cardiff, Glasgow, Grimsby, Hartlepool, Hull, Leith, Liverpool, London, Newcastle-upon-Tyne, South Shields, and Southampton, 535 cargoes of animals, consisting of 76,117 cattle, 119,350 sheep, and 15,180 swine, of which 3,140 cattle, 5,915 sheep, and 2,943 swine were thrown overboard on the voyage; 221 cattle, 386 sheep, and 392 swine were landed dead; and 93 cattle, 167 sheep, and 130 swine were so much injured that it was necessary to slaughter them at the place of landing.

Thus it appears that 14,024 animals were thrown overboard, 1,249 were landed dead, and 455 were so much injured or exhausted that they were killed at the place of landing; making a total number of 15,728 animals which were either lost on the passage or so much injured that it was necessary to slaughter them immediately on landing.

The following tables will give interesting information on the foreign cattle, sheep, and swine trade of Great Britain.

From Table 1 it will be observed that the United States hold the third rank in respect to the number of animals imported into Great Britain. It is only since 1877, as shown in statement No. 4, that importation of American live stock has begun to take such a rapid and extensive development.

From Table 2 it will be remarked that the port of Liverpool ranks now second in importance in regard to the importation of foreign live stock into Great Britain, and first as to importation of American animals, as shown in statement No. 3. Five years ago Liverpool ranked fifth

only, coming after London, Harwich, Newcastle-upon-Tyne, Hull, and Southampton.

The statement No. 5 will show the rapid increase of number of live stock imported into this port during the last five years.

1.—Statement showing the number of foreign cattle, sheep, and swine imported into Great Britain, and the countries from which received, during the year 1879.

Countries from which exported.	Cattle.	Sheep.	Swine.	Total animals.
Belgium .....	.....	20,423	128	20,550
Denmark	40,785	55,597	10,554	106,936
France	188	122	612	917
Germany .....	.....	329,856	492	330,378
Schleswig-Holstein	24,557	46,219	.....	70,776
Netherlands	37,617	294,597	19,009	351,223
Norway	898	.....	.....	898
Portugal	13,492	.....	1	13,493
Spain	16,775	1	6	16,782
Sweden	8,890	3,625	1,789	14,294
Argentine Confederation	10	20	.....	30
Canada	25,185	73,913	3,683	102,701
India	1	2	.....	3
Jamaica .....	.....	.....	6	6
Malta	1	.....	.....	1
South Australia .....	.....	.....	1	1
United States	76,117	119,350	15,180	210,647
Total	244,501	943,754	51,441	1,239,696

2.—Statement showing the number of foreign cattle, sheep, and swine imported into Great Britain, and the ports at which landed, during the year 1879.

Ports at which landed.	Cattle.	Sheep.	Swine.	Total animals.
Bristol	4,088	17,296	889	22,273
Cardiff	287	117	537	941
Falmouth	8,575	.....	.....	8,575
Glasgow	7,083	16,560	620	24,263
Goolie	97	43	.....	140
Granton	81	4,441	.....	4,473
Grimsby	112	8,205	122	8,439
Hartlepool	218	17,554	290	18,062
Harwich	1	.....	.....	1
Hull	8,799	21,612	1,960	32,371
Leith	2,891	1,728	1	4,620
Liverpool	54,384	112,241	14,290	180,895
London	111,973	714,799	20,970	847,742
Middlesborough	17	4	.....	21
Newcastle-upon-Tyne	31,101	28,426	11,485	71,012
Plymouth	3,455	1	4	3,890
Portsmouth	4,455	2	.....	4,455
Shield (south)	337	.....	.....	337
Southampton	9,998	211	266	10,445
Sunderland	4,268	472	7	1,747
Weymouth	13	42	.....	55
Total	244,501	943,754	51,441	1,239,696

3.—Statement showing the number of cattle, sheep, and swine imported into Great Britain from the United States, and the ports at which landed, during the year 1879.

Ports at which landed.	Cattle.	Sheep.	Swine.	Total animals.
Bristol	2,129	12,034	2	14,165
Cardiff	287	117	537	941
Glasgow	1,518	5,292	.....	6,810
Grimsby .....	.....	4,455	1	1
Hartlepool	218	.....	287	287
Hull	400	1,443	292	2,135
Liverpool	39,669	74,387	14,007	128,063
London	20,817	21,023	15	51,855
Newcastle-upon-Tyne	3	413	38	454
Shields (south)	337	.....	.....	337
Southampton	739	186	.....	985
Sunderland .....	.....	.....	1	1
Total	76,117	119,350	15,180	210,647

4.—Statement showing the number of cattle, sheep, and swine imported from the United States into Great Britain during the years 1875, 1876, 1877, 1878, and 1879.

Years.	Cattle.	Sheep.	Swine.	Total animals.
1875.....	299	.....	.....	299
1876.....	392	.....	.....	392
1877.....	11,538	13,120	226	24,884
1878.....	68,450	43,940	16,321	128,711
1879.....	76,117	119,350	15,180	210,647

5.—Statement showing the number of cattle, sheep, and swine imported into the port of Liverpool during the years 1875, 1876, 1877, 1878, and 1879.

Years.	Cattle.	Sheep.	Swine.	Total animals.
1875.....	11,899	10,014	57	21,470
1876.....	6,736	17,466	12	24,214
1877.....	17,188	8,151	720	25,059
1878.....	56,319	56,555	14,380	128,254
1879.....	54,334	112,241	14,290	180,865

PROPORTION OF CARGOES OF FOREIGN ANIMALS IN WHICH DISEASE WAS DETECTED.

There were landed in Great Britain during 1879, from places out of the United Kingdom, exclusive of the Channel Islands, 2,671 cargoes of animals, consisting of 244,501 cattle, 973,754 sheep, 51,441 swine.

In 122 cargoes the inspectors detected disease among the animals on landing in this country. The diseased cargoes came from the following countries: Belgium, 46 cargoes, of which 6 cargoes, consisting of 3,141 sheep, contained 8 sheep affected with foot-and-mouth disease, and 68 sheep affected with sheep-scab. France, 27 cargoes, of which 2 cargoes, consisting of 25 cattle, 30 swine, contained 1 of the cattle affected with pleuro-pneumonia, and 20 swine affected with foot-and-mouth disease. Germany, 496 cargoes, of which 21 cargoes, consisting of 312 cattle, 28,277 sheep, contained 29 sheep affected with foot-and-mouth disease, and 496 sheep affected with sheep-scab. The Netherlands, 659 cargoes, of which 21 cargoes, consisting of 1,830 cattle, 11,076 sheep, 1,079 swine, contained 9 cattle affected with pleuro-pneumonia, 1 head of cattle, 7 sheep, and 64 swine, affected with foot-and-mouth disease, and 83 sheep affected with sheep-scab. Canada, 157 cargoes, of which 3 cargoes, consisting of 339 cattle, 1,746 sheep, 180 swine, contained 13 sheep affected with sheep-scab. The United States of America, 535 cargoes, of which 69 cargoes, consisting of 13,301 cattle, 8,553 sheep, contained 137 cattle affected with pleuro-pneumonia, 33 sheep affected with foot-and-mouth disease, and 37 sheep affected with sheep-scab.

The following table shows the number of foreign animals affected with any contagious or infectious disease which were imported into Great Britain in the year 1879, and the number of healthy animals which were brought in the same vessels with the diseased animals.

Number of foreign cattle, sheep, and swine affected with any contagious or infectious diseases, which were imported into Great Britain in the year 1870, and the number of healthy animals which were brought in the same vessels with the diseased animals.

Foreign countries and ports from which brought.		Ports to which brought.	Disease.	Diseased animals.				Healthy animals brought in the same vessels with diseased animals.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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SANITARY STATE OF STOCK IN GREAT BRITAIN.

Referring to the sanitary state of stock in Great Britain during 1879, it is satisfactory to record that no extensive outbreak of contagious diseases occurred; but losses among animals from diseases which depend on climatic influences have been exceptionally severe.

Cattle-plague.—No outbreak of cattle-plague was reported to have occurred in Great Britain during the year 1879, and no cases of the disease were detected among animals from abroad by the inspectors at English ports.

Pleuro-pneumonia.—In 1879, pleuro-pneumonia existed in 63 counties in Great Britain, the number of outbreaks being 1,549 against 1,721 in 1878. The number of cattle attacked during 1879 was 4,414 against 4,593 in the previous year, at the end of which 7 remained diseased. During 1879, 4,296 cattle were slaughtered and 119 died.

In England, from the returns received during 1879, it appears that pleuro-pneumonia existed in 38 counties; 1,321 fresh outbreaks occurred, 3,423 cattle were attacked, and 7 remained diseased from the previous year; 3,322 were killed, and 106 died.

In Wales the disease existed in 5 counties, in which there were 8 fresh outbreaks, 18 cattle were attacked, 10 were killed, and 4 died.

In Scotland, reports of the existence of the disease were received from 20 counties. During the year, 220 fresh outbreaks took place, 973 cattle were attacked, 964 were killed, and 9 died.

It is worthy of notice that some counties, with a large cattle population, did not return any cases of pleuro-pneumonia during the year; for instance, Somerset, with 206,764 cattle; Cornwall, with 159,428 cattle; Devon, with 222,679 cattle; Wilts, with 91,191 cattle, remained free.

Pleuro-pneumonia has been almost extirpated from the following counties: Chester, Northumberland, and Warwick. In Kent, Lancaster, and the West Riding of York, the disease has increased to a considerable extent.

In Aberdeenshire the cases returned increased from 54 in 1878 to 263 in 1879.

In the cities of Glasgow and Edinburgh the number of reported attacks in 1879 was little more than half of the previous year.

Foot-and-mouth disease.—No serious extension of foot-and-mouth disease has been reported to have occurred in Great Britain in 1879.

According to the returns which have been received from inspectors of local authorities, foot-and-mouth disease has existed in 28 counties in England, and in one county in Wales. One outbreak was reported to have occurred in Scotland, but it was subsequently ascertained that the disease was not foot-and-mouth disease.

The counties in which foot-and-mouth disease has prevailed most extensively are Berks, Cambridge, Hants, Hunts, and Dorset, and at one time there was every indication that the disease would extend in the county of Cambridge.

In the month of February, foot-and-mouth disease was reported to exist in Cambridge by the inspectors of the local authority among the sheep.

Sheep-pox.—No outbreak of sheep-pox was reported to have occurred in Great Britain during the year 1879, and no cases of the disease were detected among sheep from abroad by the inspectors at English ports.

Sheep-scab.—There were 2,229 outbreaks of sheep-scab reported in 1879 as having occurred in Great Britain, against 2,335 in 1878. The number of attacks amounted to 54,607 against 53,046 in 1878.

The greatest number of cases were reported from the counties of Lincoln (parts of Kesteven), Monmouth, East Riding of York, and Leicester.

Sheep-scab was reported to have existed in 83 counties in Great Britain, viz, 47 in England, 11 in Wales, and 25 in Scotland in 1879. In the previous year the numbers were: Great Britain, 75 counties, viz, England, 46 counties; Wales, 11 counties; Scotland, 18 counties.

Glanders and farcy.—During the year 1879 the existence of glanders was reported from 49 counties in Great Britain, viz, 37 counties in England, 5 in Wales, and 7 in Scotland.

Fresh outbreaks took place on 646 premises; 906 animals were attacked, and 3 remained diseased from the previous year; 875 diseased animals were killed, 23 died.

In 1878 glanders existed in 42 counties in Great Britain, viz, 31 in England, 5 in Wales, and 6 in Scotland; and 549 animals were reported to have been attacked with the disease.

In 1879 reports of the existence of farcy were received from 21 counties in Great Britain, viz, 18 in England, 2 in Wales, and 1 in Scotland; 290 fresh outbreaks occurred, and 461 animals were attacked; 5 remained diseased from the previous year; 431 animals were killed, 7 animals died, and 25 animals recovered.

In 1878 farcy was reported to have existed in 19 counties in England, 2 in Wales, and 3 in Scotland.

From an examination of the returns which have been received from the inspectors of the local authorities, it appears that more cases of glanders and farcy have been returned in the metropolis than in any previous year. There is no evidence to show that the disease is more prevalent than in former years, but there is no doubt that the increased number of cases returned is due to the activity on the part of the executive in carrying out the act of 1878, and orders of council relating to these diseases.

During the past year many individuals have been summoned for neglecting to give notice of the existence of disease on their premises and for the expense and movement of diseased animals on high roads, and in several instances the full penalty of £20 and costs has been inflicted by the magistrates.

Swine fever.—Swine fever prevailed during 1879 to an alarming extent in some districts; the disease has been returned from 44 counties in England, 6 in Wales, and only 3 in Scotland; 2,765 fresh outbreaks of the disease have been reported; 17,074 swine have been attacked, 13,643 killed on account of the disease, and 124 recovered, while 988 swine which have herded with diseased ones have been slaughtered by the local authorities in the 23 counties previously referred to to prevent the spreading of the disease; in addition to this, 3,416 have been reported to have died of the disease.

Compensation paid by local authorities for animals slaughtered.—The compensation paid by local authorities in Great Britain for animals slaughtered during the year ending the 31st of December, 1879, amounted to \$264,538 for England and Wales, and \$52,027 for Scotland, making a total for Great Britain of \$316,565.

Number of farms or other places in the counties of Great Britain upon which fresh outbreaks of pleuro-pneumonia were reported, by the inspectors of the local authorities to have occurred during the year 1879, with the number of cattle reported to have been attacked, to have been killed, to have died, and to have recovered.

Counties, &c.	Farms or other places.			Healthy cattle on infected premises.		Cattle attacked.		Diseased cattle.			
	Number which were infected with the disease at the end of the previous year.	Number upon which fresh outbreaks took place during the year.	Total number infected with the disease during the year.	Slaughtered.	Removed.	Remaining diseased from the previous year.	Attacked during the year.	Killed.	Died.	Recovered.	Remaining.
Great Britain, 63 counties	150	1,549	1,699	1,329	713	7	4,414	4,286	119	.....	6
England, 38 counties	106	1,431	1,437	883	543	7	3,423	3,322	104	.....	2
Wales, 5 counties	1	8	9	.....	.....	.....	.....	10	4	.....	4
Scotland, 20 counties	43	220	263	496	170	.....	973	964	9	.....	.....
ENGLAND.											
Buckingham .....	.....	5	5	19	4	.....	30	29	1	.....	.....
Chester	3	17	19	24	1	.....	.....	28	4	.....	.....
Cumberland	4	16	20	43	24	.....	113	112	1	.....	.....
Derby	1	26	27	43	8	.....	114	111	3	.....	.....
Essex	11	130	141	82	81	.....	327	303	24	.....	.....
Kent (ex-Metropolis)	10	79	89	26	5	1	230	228	5	.....	.....
Lancaster	12	99	111	159	75	1	391	291	11	.....	.....
Leicester	4	23	27	86	31	.....	57	65	2	.....	.....
Lincoln	3	14	17	8	21	.....	32	31	1	.....	.....
Middlesex (ex-Metropolis)	5	25	31	13	27	1	100	101	.....	.....	.....
Norfolk	6	86	92	14	13	1	210	205	8	.....	.....
Northampton	4	22	26	15	11	2	56	55	.....	.....	.....
Northumberland	3	13	15	31	5	.....	24	24	.....	.....	.....
Nottingham	1	23	24	15	83	.....	65	64	1	.....	.....
Stafford	2	77	79	17	.....	1	175	167	9	.....	.....
Suffolk	6	62	68	7	6	.....	161	158	3	.....	.....
Surrey (ex-Metropolis)	2	14	16	139	26	.....	115	111	4	.....	.....
York	10	347	367	43	40	.....	543	524	18	.....	1

Number of farms or other places in the counties of Great Britain upon which fresh outbreaks of foot-and-mouth disease were reported by the inspectors of the local authorities to have occurred during the year 1879, with the number of animals reported to have been attacked, to have been killed, to have died, and to have recovered.

Counties, &c.	Animals attacked during the year.				Diseased animals.				Recover- ed.	Remain- ing.					
	Animals remaining diseased from the previous year.				Killed.										
	Number upon which fresh outbreaks took place during the year.	Total number infected with the disease during the year.	Animals remaining diseased from the previous year.	Cattle.	Sheep.	Swine.	Total.	Cattle.			Sheep.	Swine.	Total.		
Great Britain	1	137	138	3	261	15,681	5	15,947	5	83	8	106	204	15,613	95
England	1	136	137	3	260	15,681	5	15,946	5	83	8	106	204	15,612	95
Wales		1	1		1			1						1	
Scotland															
ENGLAND.															
Berks	6	6	6		2	1,270		1,272		3					
Cambridge	47	47	47		1	8,480		8,481	1					1,220	
Derby	5	5	5		15	17	2	17	3					8,443	
Dorset	11	11	11		1	704		705				4	4	701	
Durham	2	2	2		9			9							
Essex	2	2	2			417		417						9	
Hants	14	14	14		60	3,100		3,160		1		20	20	20	
Huntingdon	5	5	5			833		833			1	1	21	3,114	24
Kent (ex-Metropolis)	7	7	7		14	140		154		29		14	14	14	
Monmouth	1	1	1		15			15				16	16	18	
Norfolk	1	1	1		13			13			2		2	13	
Norwich	1	1	1			130		130							
Oxford	2	2	2		305		3	308				36	36	190	
Salop	7	7	7		24			24						203	69
Stafford	2	2	2		47			47						24	
Suffolk	2	2	2			61		61			3		3	44	
Sussex	2	2	2		33			33						61	
Wiltshire	4	4	4		18	248		266						33	
Windsor	7	7	7		10	3		13						266	
York	10	10	10		11			11						13	
Other counties									1		2		2	9	
WALES.															
Montgomery	1	1	1		1			1						1	

Number of farms or other places in the counties of Great Britain upon which fresh outbreaks of swine fever were reported by the inspectors of the local authorities to have occurred during the year 1879, with the number of swine reported to have been attacked, to have been killed, to have died, and to have recovered.

Counties, &c.	Farms or other places.			Healthy cattle on infected premises.		Cattle attacked.		Diseased cattle.			
	Number which were infected with the disease at the end of the previous year.	Number upon which fresh outbreaks took place during the year.	Total number infected with the disease during the year.	Slaughtered.	Removed.	Remaining diseased from the previous year.	Attacked during the year.	Killed.	Died.	Recovered.	Remaining.
Great Britain, 53 counties	20	2,765	2,765	2,779	477	208	17,074	13,643	3,416	124	99
England, 44 counties	20	2,704	2,724	2,767	477	208	16,884	13,538	3,344	116	94
Wales, 6 counties	57	57	57	12	12	178	101	60	8	8	8
Scotland, 3 counties	4	4	4	.....	.....	.....	12	4	3	.....	5
ENGLAND.											
Bedford .....	.....	67	67	46	4	.....	237	192	45	.....	.....
Berks	3	74	77	9	.....	57	857	691	195	.....	28
Buckingham	4	48	47	75	.....	50	371	289	97	.....	35
Chester .....	.....	74	74	19	3	.....	193	153	40	.....	.....
Cornwall .....	.....	11	11	12	.....	.....	66	52	14	.....	.....
Derby .....	.....	112	112	100	8	.....	341	284	57	.....	.....
Devon .....	.....	67	67	9	.....	.....	245	202	42	.....	.....
Dorset .....	.....	51	51	58	1	.....	441	367	73	1	.....
Essex	2	163	165	321	5	4	2,008	1,697	305	5	.....
Gloucester .....	.....	94	94	186	.....	.....	404	264	123	17	.....
Hants .....	.....	60	60	44	4	.....	621	446	166	.....	9
Hertford	1	29	30	85	.....	.....	353	267	86	.....	.....
Huntingdon .....	.....	57	57	75	6	.....	499	378	111	10	.....
Kent (ex-Metropolis) .....	.....	15	15	41	6	.....	112	93	17	2	.....
Lancaster	1	116	117	117	4	45	271	190	122	4	.....
Leicester .....	.....	26	26	.....	4	.....	124	101	15	8	.....
Lincoln .....	.....	20	20	5	.....	.....	94	61	33	.....	.....
Middlesex (ex-Metropolis) .....	.....	28	28	122	.....	.....	271	169	72	.....	.....
Monmouth .....	.....	28	28	.....	.....	.....	184	138	45	1	.....
Norfolk	5	250	255	382	.....	46	2,169	1,875	325	2	.....
Northampton	1	46	47	49	1	.....	269	231	38	.....	.....
Notts	2	68	70	8	.....	8	154	139	16	.....	3
Oxford .....	.....	18	18	26	.....	.....	151	107	41	8	.....
Salop .....	.....	87	87	47	6	.....	347	247	97	8	.....
Somerset .....	.....	207	207	262	31	.....	1,683	1,368	309	4	2
Stafford .....	.....	98	98	10	28	.....	463	357	106	.....	.....
Suffolk .....	.....	118	118	225	20	.....	1,392	1,173	192	22	5
Sussex .....	.....	19	19	33	27	.....	193	126	67	.....	.....
Warwick .....	.....	28	28	170	315	.....	83	66	17	.....	.....
Wilts	1	53	54	84	8	3	319	247	75	.....	.....
York .....	.....	462	462	119	8	.....	1,524	1,191	325	8	.....
Liberty of the Isle of Ely .....	.....	44	44	25	1	.....	157	106	28	23	.....
Soke of Peterborough .....	.....	38	38	39	.....	.....	105	87	17	1	.....
The Metropolis .....	.....	4	4	.....	.....	.....	82	76	6	.....	.....
WALES.											
Six counties .....	.....	57	57	12	.....	.....	178	101	60	8	.....
SCOTLAND.											
Three counties .....	.....	4	4	.....	.....	.....	12	4	3	.....	5

Number of farms and other places in the counties of Great Britain upon which fresh outbreaks of sheep-scab were reported by the inspectors of the local authorities to have occurred during the year 1879, and the number of sheep reported to have been attacked by the disease.

Counties, &c.	Number of farms or other places upon which fresh outbreaks took place.	Sheep attacked.	Counties, &c.	Number of farms or other places upon which fresh outbreaks took place.	Sheep attacked.
Great Britain, 83 counties.....	2, 229	54, 607	ENGLAND—Continued.		
England, 47 counties.....	1, 503	44, 690	Salop.....	89	598
Wales, 11 counties.....	578	6, 765	Somerset.....	60	1, 876
Scotland, 25 counties.....	148	2, 882	Warwick.....	12	476
ENGLAND.			Worcester.....	42	1, 562
Bedford.....	19	1, 030	York.....	228	7, 265
Berks.....	6	573	Other counties.....	179	4, 518
Cambridge.....	14	902	The Metropolis.....	1	761
Chester.....	79	1, 198	WALES.		
Cornwall.....	19	485	Denbigh.....	155	1, 525
Cumberland.....	97	635	Flint.....	58	881
Derby.....	69	477	Glamorgan.....	106	1, 220
Devon.....	80	1, 007	Merioneth.....	88	941
Dorset.....	4	812	Other counties.....	171	2, 198
Durham.....	66	512	SCOTLAND.		
Gloucester.....	23	929	Aberdeen.....	8	239
Hants.....	4	494	Ayr.....	23	171
Hertford.....	13	936	Dumfries.....	14	177
Kent (ex-Metropolis).....	13	1, 457	Edinburgh.....	6	185
Lancaster.....	65	381	Elgin or Moray.....	6	264
Leicester.....	66	1, 942	Linlithgow.....	2	455
Lincoln.....	109	7, 635	Perth.....	7	153
Middlesex (ex-Metropolis).....	8	176	Stirling.....	21	399
Monmouth.....	138	4, 677	Wigtown.....	8	209
Norfolk.....	24	783	Other counties.....	53	630
Northampton.....	31	1, 371			

STEPHEN B. PACKARD,
Consul.

UNITED STATES CONSULATE,
Liverpool, England, September 20, 1880.

CATTLE TRADE OF LIVERPOOL WITH THE UNITED STATES.

REPORT BY CONSUL PACKARD.

According to the statement published in the annual report of the veterinary department of the privy council office of Great Britain there were imported from the United States into the port of Liverpool during the year 1879, 39,669 head of cattle, 74,387 head of sheep, and 14,007 head of swine.

The following table gives the number of these animals which on landing were found affected with contagious or infectious disease, together

with the number of healthy animals which were brought in the same vessels with the diseased animals:

Ports from which brought.	Disease.	Diseased animals.				Healthy animals brought in the same vessels with diseased animals.			
		Cattle.	Sheep.	Swine.	Total.	Cattle.	Sheep.	Swine.	Total.
Boston	Pleuro-pneumonia	59	.....	.....	59	6, 122	4, 268	.....	10, 390
Do	Foot-and-mouth .....	.....	33	.....	33				
Do	Sheep-scab .....	.....	21	.....	21				
New York	Pleuro-pneumonia	7	.....	.....	7	1, 256	.....	.....	1, 256
Philadelphia	do	6	.....	.....	6				
Portland	do	27	.....	.....	27				
						993			993
						334			334

The two following statements will show the number of cattle, sheep, and swine imported from the United States into this port during the first six months of the year 1880, the number of those animals which were found affected with contagious diseases on their arrival, and the number of healthy animals which were brought in the same vessels with the diseased animals:

Return of the number of cattle, sheep, and swine imported from the United States into the port of Liverpool during the first six months of the year 1880.

Country from which exported.	Liverpool.			
	Cattle.	Sheep.	Swine.	Total animals.
United States	19, 257	8, 071	936	28, 364

Number of cattle, sheep, and swine, affected with contagious or infectious diseases, which were imported into the port of Liverpool during the first six months of the year 1880, and the number of healthy animals which were brought in the same vessels with the diseased animals.

American ports from which brought.	Disease.	Diseased animals.				Healthy animals brought in the same vessels with diseased animals.			
		Cattle.	Sheep.	Swine.	Total.	Cattle.	Sheep.	Swine.	Total.
Baltimore	Pleuro-pneumonia	2	.....	.....	2	454	.....	.....	454
Boston	do	96	.....	.....	96	6, 052	3, 192	.....	3, 192
Do	Foot-and-mouth .....	.....	51	.....	51				
Do	Sheep-scab .....	.....	22	.....	22				
Do	Swine fever .....	.....	.....	114	114	.....	.....	601	601
New York	Pleuro-pneumonia	13	.....	.....	13	1, 075	2, 430	.....	1, 075
Do	Foot-and-mouth .....	.....	12	.....	12				
Portland	Pleuro-pneumonia	4	.....	.....	4	647	.....	.....	647

STEPHEN B. PACKARD,
Consul.

UNITED STATES CONSULATE,
Liverpool, England, September 20, 1880.

EXPORT TRADE OF NOTTINGHAM.

REPORT BY COMMERCIAL AGENT SMITH.

The trade of this consular district being principally in lace goods and hosiery, I have to report to you the value of the exports of those articles from the United Kingdom to all countries during the month of August last, and during the last eight months, as compared with the exports for the corresponding periods of the three years last past. The figures are taken from the report of the board of trade, lately issued. The figures show a large increase in the export of lace goods and but a moderate increase in the hosiery exports. When I make my annual report of the trade of this district next month, I think it will appear that nearly the whole increase has been in the American trade.

LACE GOODS EXPORTED DURING AUGUST.

Description.	1878.	1879.	1880.
Lace and patent net	\$493,268 00	\$685,918 00	\$894,348 00
Silk lace	37,831 50	33,686 00	34,549 00
Total	531,119 50	719,604 00	928,897 00

EXPORT OF LACE GOODS DURING EIGHT MONTHS.

Lace and patent net	\$4,009,268 00	\$4,653,040 00	\$6,852,822 00
Silk lace	328,784 71	251,869 80	292,070 00
Total	4,338,052 71	4,904,929 80	7,144,892 00

EXPORT OF HOSIERY IN AUGUST.

Stockings and socks	\$169,235 40	\$144,707 84	\$201,555 50
Other kinds	200,207 81	257,389 00	249,084 50
Total	369,443 21	402,186 84	450,640 00

EXPORT OF HOSIERY DURING EIGHT MONTHS.

Stockings and socks	\$1,259,328 53	\$1,292,668 50	\$1,317,799 53
Other kinds	1,467,315 50	1,550,549 63	1,870,240 00
Total	2,726,644 03	2,843,218 13	3,188,039 53

NUMBER OF DOZEN PAIRS OF STOCKINGS AND SOCKS EXPORTED.

August	93,891	90,904	117,919
Eight months	807,949	787,001	828,079

JASPER SMITH,
Commercial Agent.

UNITED STATES COMMERCIAL AGENCY,
Nottingham, England, September 15, 1880.

INTRODUCTION OF AMERICAN GRAPES INTO GREAT BRITAIN.

REPORT BY CONSUL WEBSTER, OF SHEFFIELD.

I have the honor to submit the following: As great quantities of foreign grapes are sold in this market, the question has often suggested itself, Why may not our grape-growers in the United States have a share in this trade, and increase it to much larger proportions?

As nearly as I can learn from wholesale dealers here who attend the sales in London, Liverpool, and other ports, the weekly importation of this fruit into Great Britain amounts to about 40,000 packages—boxes and barrels.

The grapes are of two kinds, the Lisbon and Almeria. The Lisbon is earliest in the market. It is a sweet white grape, and will not keep; consequently, it must be sold rapidly. It brings from 12 to 15 cents per pound, retail. The shipment of this grape begins in August, and continues to about the 1st of November.

The Almeria, from the south of Spain, is hardy, white, oval-shaped, and will keep until March, or later. It sells here, at retail, for from 16 to 25 cents per pound. These grapes all come packed in cork sawdust, in tight boxes and barrels—the Lisbon in boxes containing 60 pounds each, the Almeria in barrels of 40 to 45 pounds each. The shipments of the Almeria commence in September, and continue to the end of the year.

I notice in the Anglo-American Times, a London journal, an article on "Fruit-growing in Iowa," by Mr. Geo. H. Wright, of Sioux City. Mr. Wright states that grapes were so plentiful in Iowa in the year 1879 that they sold in the Des Moines market for 2½ cents per pound. I am not aware whether there are other grapes grown in the United States possessing the keeping quality requisite to allow their transportation to this country. If so, why may not a large and valuable trade be developed? Dealers here suggest that, probably, one difficulty in shipping the American grape would be with the packing material. They think the common sawdust would injure the flavor of the fruit. The cork sawdust is inodorous and does not collect moisture. If there is any force in this objection, our growers would surely find a way to meet it. I am not able at present to make an exact statement of quantities; but probably not far from 2,000,000 pounds of foreign grapes arrive in Great Britain weekly from the middle of August to the end of the year. Indeed, I am informed, since writing the above, that shipments continue to some extent through the winter.

C. B. WEBSTER, *Consul.*

UNITED STATES CONSULATE,
Sheffield, England, November 12, 1880.

THE CONDITION OF AFFAIRS IN IRELAND.

REPORT BY CONSUL BROOKS, OF CORK.

Conflicting reports are received from the several sections of the southern portion of Ireland comprised in this consular district regarding the condition of the crops; but it is safe to assume that the yield of pota-

toes, the staple crop, will be far above the average of even the most favored years for a generation past. In some localities the "blight" has appeared, it is true, but the general report is in effect that the production is greater than has been anticipated. As resultant from this it is to be noted that potatoes of the new crop may be purchased in the market cheaper now than ever before at this season of the year during the past quarter of a century. Wheat, oats, and flax are also in fine condition, and promise a bountiful yield, although recent wind and rain storms have beaten down the fast-ripening fields, and some loss may ensue in consequence. In short, the two years of distress and bad crops just passed are now being followed in this section of Ireland by a most generous harvest and unexampled success in agriculture.

It is doubtful, however, if this favorable condition will effect any permanent and satisfactory relief to the laboring and the farming classes. During the two years mentioned those classes throughout the entire country were pinched in their resources to the last extremity, and in consequence are yet in arrears for rent and other obligations. At the same time this unfortunate situation was accompanied by the most violent political agitation, and by the emigration, within the first six months of the present year, from these shores to the United States of nearly 77,000 people, among whom were many of the most enterprising and active of the agricultural communities—the very bone and sinew of the land. This depletion of the laboring and producing elements cannot fail to be materially felt, and will serve, in combination with the heavy load of debt resting upon the masses, to continue the depressed condition of affairs, despite the advantages of the present promising harvest. It is, nevertheless, a cause of congratulation that the immediate future is unclouded with apprehensions of famine, and that, with here and there an exception, the suffering of the people for the actual necessities of life are among the things of the past—not that suffering in various forms of deprivation and oppression will entirely disappear, for that will never occur under the existing state of things, but that wide-spread and all-prevailing distress has been greatly alleviated.

As a natural consequence of this continual disturbance of business and social equilibrium, the political agitations of last spring will also be continued, and it is to be feared in this connection that not a little trouble will follow, especially in Western Ireland, where a large number of tenant evictions have already occurred and more are to ensue, and to which section troops are now in readiness to be sent by Her Majesty's Government. In fact, for the purpose of mobilizing all the available infantry force in this vicinity, a large detail of marines has been ordered to garrison duty in and about the forts of Queenstown (the port of Cork), thereby placing the accustomed garrison of two complete infantry regiments practically under marching orders.

The necessity, as alleged, for this military demonstration, arises from the failure of Parliament to enact further "stay" measures—the compensation for disturbance bill, for the relief of the tenant class—similar stay laws, for example, to those enacted in Wisconsin and many other of our Western States twenty years ago, for the protection of farmers who had mortgaged their farms for the encouragement of railroad and other internal improvements, and who were unable to meet the obligations of those mortgages at maturity. Although an uncertain temporary relief from the oppression of debt had been afforded to them, the Irish tenant farmers expected, and possibly deserved, a further extension of time in which to recuperate themselves from the severe affliction of loss of crops. They at least expected a parliamentary provision for an

increase of compensation at the hands of the landlords in the event of evictions, or an indefinite stay of evictions growing out of arrearages of rent occasioned by that loss, and now that they have been disappointed in these expectations, it is not improbable that forcible resistance will be made in many instances to the enforcement of the law regulating the cessation of tenant holdings.

The most important result of all this will be the additional arguments evolved out of this disappointment, and consequent military demonstration, to add force to the clamor for an independent parliament for Ireland or for the abolition of the "House of Lords," or for the actual overthrow of "British rule," as the phrase goes here, on this island.

In other words, the home-rule party will not fail to make most effective use of these current proceedings to widen the breach which already exists to an appreciable extent between some of the Irish people and Her Majesty's Government.

Whether the arguments in behalf of this clamor have now or ever had any solid basis is a question to be solved only by investigation, and the solutions, of course, must, in the nature of things, be as varied as the prejudices of the investigators. But the stubborn fact exists that discontent with the government and distress growing out of prevalent systems are constantly and dangerously increasing. It requires no minute scrutiny to discover this, nor the further fact that, if organization were possible among the masses, if arms could be procured and competent leaders found, at least one-third of the people of Ireland would at once be arrayed in open rebellion against those systems. As it is, the warfare against them is characterized by sporadic "agrarian outrages," resistance to legal evictions, and turbulent political demonstrations.

The rights of tenants in this country are definitely fixed by law and include many privileges which appear strange as viewed from an American stand-point. Among them are compensation for improvements, for unexhausted manures, and for other things which amount to a liberal bonus, always accruing during the tenure of a lease. Thus it happens that when a landlord desires or attempts to dispossess a non-paying tenant, the latter confronts him with a set-off against his account for arrearages of rent, and the dispute arising between them is arbitrated or adjudicated in the land courts. On the other hand, the "lords of the soil" rent their land upon certain or uncertain valuations to persons who subrent it to others, who subrent it again and again, mortgage upon the land, securities upon the leases, and head taxes intervening meanwhile to swell the amount finally paid by the actual husbandman to extravagant and in many instances extortionate sums. And the worst of it all is that the original owner, as well as the middle men, are almost invariably non-residents, who expend their receipts and profits from this complicated arrangement of leases elsewhere than in Ireland.

Again, the tenants are in nine cases out of ten scantily provided with capital or the means with which to conduct their farming ventures. Very often their "holdings" are limited to ten, fifteen, or twenty acres, rarely more than fifty, and upon these they essay to rear their families—families that average six or seven children. The success they achieve in this effort is, of course, circumscribed, and when their children reach the adult age, not having, with rare exceptions, enough worldly goods to start in life for themselves, they generally remain under the parental thatch, or, being married, build new cottages for themselves upon the parental holding. Thus it occurs that in less than half a generation a bit of land barely capable of maintaining one adult family becomes burdened with the support of one or more families, and the result is distress, debt, and eviction.

Their manner of life has often been described as plain and frugal, and it is true that they live from month's end to month's end without meat at their meals, subsisting mainly upon potatoes, milk, and "stock-fish." But it is also true that the amount of money the majority of them expend for porter and spirits would supply them with better food, for it is their hereditary habit—the custom of generations—to drink both malt and distilled liquors as if they were among the necessities of existence.

The soil is productive enough if properly tilled by a contented people to support in comfort double the present population of Ireland. And besides agriculture there are other resources, including especially the fisheries, which would yield unmeasured returns if properly developed. But it is a fact apparent to the most casual observer that the Irish (so called) peasant who becomes a good citizen in the United States is stagnated as a subject here. The result is a cataleptic embargo upon his existence which can only be permanently raised by emigration, or temporarily removed by the excitement of a "ruction" against some real or imaginary oppression. He plods along year after year and generation after generation, in a chronic condition of discontent, always verging upon destitution, and never seemingly aware of his prostration until the potatoes are blighted and famine stares him in the face.

But it should be understood that aside from the distressed and discontented classes, numbering more than one-half the population of the island, the people are loyal to Her Majesty's Government, and as property-holders, or as engaged in commercial pursuits, are naturally conservative in their political tendencies. They are the actual recipients of the benefits of the present harvest, and are enjoying the fruits of a temporarily deferred prosperity—a prosperity interrupted by the succession of agricultural failures and now resumed by virtue of a return of business activity in the agricultural markets. Observations confined to this class alone would convey the impression that Ireland is contented and progressive and that the complaints of hard times and misrule so often heard are groundless. The savings-banks are lavishly patronized by them, and the national schools furnish them the very best means of educating their children. They stand ready at any and all times to resist any radical change in the governmental system, and, although their national pride as Irishmen serves to provoke a sympathy in their breasts for any movement in the direction of the elevation or independence of their race, they are thoroughly devoted to the traditions and entities of the United Kingdom. Heretofore they have been, in effect, the real power at the ballot-box; but that power is now visibly relaxed, and the truth is the opponents of present governmental forms are in the majority.

E. P. BROOKS, *Consul*.

UNITED STATES CONSULATE,
Cork, Ireland, August, 10, 1880.

THE NORTH ATLANTIC OCEAN CARRYING-TRADE.

REPORT BY CONSUL BROOKS, OF CORK.

I have the honor to submit a few observations regarding a striking feature of the commerce of this port, which, perhaps, may be of interest to the Department of State, and to the general public of the United States.

CORK AS A PORT OF CALL.

Queenstown, the port of Cork, is used as a favored and favorite resort "for orders" of sailing vessels bound from the United States for North-

ern Europe. That is, when a vessel laden with a general cargo, or with grain, is sent to Northern Europe, her first stopping-place is generally either Queenstown or Falmouth, where the master subsequently receives orders by mail or telegraph from his owners or consignees to proceed to some other port in England or on the continent, there to discharge his cargo and make arrangements for the return voyage, either in ballast or otherwise. For this reason large numbers of vessels are constantly in or off Queenstown Harbor, and there is probably no single point in Northern Europe, except Falmouth, at which observations can be so accurately made regarding the nationality, so to speak, of the North Atlantic Ocean carrying-trade as at this port. The result of such observations and of an inspection of the official records of the several foreign consulates located here show very clearly a discouraging, though not altogether unaccountable, falling off in the number of vessels carrying the American flag engaged in that trade during the past four or five years. I append a table showing the number of arrivals of the prominent nationalities for orders, repairs, and all other causes, from January 1, 1875, to September 1, 1880:

Years.	Italian.	Norwegian.	British.	Austrian.	American.
1875	368	346	(*)	150	90
1876	496	410	536	208	151
1877	516	381	536	186	123
1878	408	310	463	154	37
1879	256	424	330	104	180
1880	264	310	308	(*)	66
Total	2,283	2,190	1,973	801	607

* No returns.

• AMERICAN GOODS IN FOREIGN BOTTOMS.

From this statement, which it is well to repeat is officially accurate, it appears that American sailing vessels trading in this portion of the Atlantic are greatly in the minority, while the Italians head the list; the Norwegians are next in number, the British are a good third, and the Austrians are fourth.

It should be understood that nearly if not quite all these vessels were freighted and chartered in the United States—from Portland, Oreg., and San Francisco, Cal., with grain; from Pensacola, Fla., with timber and lumber; from Bull River, S. C., with phosphates, &c.; from other Atlantic ports, with grain and general cargoes. The few exceptions not chartered in the United States were from the North American British provinces, or from the West Indies. But it will be noticed that all of them were chartered and freighted on the American side of the Atlantic, and that consequently the sum total of freightage and charter price or costs came out of American pockets and was paid to a large extent into foreign pockets. In other words, foreigners have, during the period mentioned, reaped the greater and overwhelming portion of the profits of the American ocean-carrying trade. And it must not be forgotten that the years in question were characterized by great financial depression in the United States, followed by almost unexampled commercial success.

DECLINE OF AMERICAN SEAMANSHIP.

Not only is this disparity in the matter of flag-carrying apparent to our national disadvantage, but it is a fact that the crews of American

vessels are composed almost entirely of foreigners. This fact will strike any one with great force who has occasion to examine the crew lists and shipping articles of those vessels here or elsewhere, and I do not hesitate to assert—after due inquiry—that in all crews of vessels sailing under the American flag, nine unnaturalized foreigners will be found to one American. There are two explanations of this: First, that the United States shipping laws guarantee to the sailor, of whatever nationality, under the American flag, better provisions for his personal comfort, better defense against mistreatment, and, finally, better opportunity of extra wages in the event of intervoyage discharge, than those of any other nation in the world; and, second, that competition in maritime trade with foreign “cheap sailors,” to adopt a phrase current among American ship masters, has reduced the wages of seamen to a sum much smaller than they can earn by less arduous labor on shore.

The plain deduction from these facts is: America furnishes the cargoes and pays all the costs of transportation, while the non-American world at large supplies the ships and sailors and reaps the profits.

The phrase foreign “cheap sailors” explains itself. But it will be interesting to know that it is based upon the fact that Norwegian and Italian sailors are paid on the average only eight or ten dollars per month for services on board of vessels of their own nationality, while American sailors, or all seamen under the American flag, are paid from fifteen to twenty-five dollars per month. And the Norwegian and Italian sailor often “finds” himself, supplying his few wants in the way of physical sustenance by laying in, at his own expense, a store of macaroni or stockfish at the beginning of each voyage, and supplementing this by catches of fresh fish wherever an opportunity is afforded. In port he buys, as I am credibly informed, the most inferior qualities and small quantities of meat and vegetables, and the charge is not unfrequently made that entire crews of the nationalities mentioned sometimes “live off the cargo.” In short, it costs comparatively nothing for the rations of Norwegian and Italian seamen, and the latter are extravagantly declared to be able to exist “on the smell of an oil rag.” On the other hand, seamen on board an American vessel are fed by the ship at the ship’s expense and are well fed, as the laws require that their rations shall be substantial and sufficient.

The result of all this, as shippers in nearly every American seaboard town are aware, is the constant increase of Norwegian and Italian sail in the ports of the United States, accompanied by offers of charters at lower rates than American ship owners or masters can afford to take. And added to this is the competition of the great steamship lines, nearly all owned by British capital, from all the prominent cities on our Atlantic coast, a competition which offers the advantage of quick transportation, cheap insurance, and rapid returns upon investments.

REMEDIAL SUGGESTIONS.

It is, perhaps, beyond the province of a consular dispatch to discuss the remedies or plans for remedies for this unfortunate situation. But I respectfully suggest that I have pointed out anew a great leakage in American business affairs, one, however, that may be effectually stopped by the adoption of some system whereby the profits of cargo-carrying could be retained where they naturally belong, viz, with the producers and manufacturers of the cargoes. The amount of this leakage, constituting as it does an annually increasing drain upon American capital, must reach the sum of millions of dollars in the aggregate every

year. This sum would, of course, be saved to the country and the pockets of our people if the vessels, steam or sail, engaged in this traffic were owned in the United States and sailed under the American flag.

It is a question whether it would not be advisable to begin the change in existing laws—evidently needed for the purpose of relieving American sailing vessels of all handicapping in this mercantile marine competition—by abrogating the taxes laid upon them for the support of marine hospitals, and by abolishing all consular fees, as well as by lessening port dues and custom-house costs. The deficiency in the revenues of the government caused by this radical change would not be extravagantly large, while the withdrawal of support for hospitals and the abolition of fees to consuls could be provided for by direct appropriation, the compensation for which would be found in the retention of money by our own people now paid, as above stated, to foreigners for handling our products and manufactures. Any American ship owner or master will indorse the statement that the tonnage dues, and the fees connected with marine protests, the employment and discharge of sailors, certificates to log-books, and last, but not least, the one, two, or three months' extra wages, as the case may be, in the event of intervoyage discharges, all collected under existing laws by consular officers, amount to a very important item in the current expenses of a ship. At the same time it should be remembered that the two months' extra wages rarely, if ever, are paid to *bona fide* American citizens, for the reason, as before explained, that—a paradox—nearly all American sailors are anything and everything but American.

It is also a question whether it would be advisable to admit into our ports free of duty, as is done in other countries, all articles or necessities for the building of ships, or, whether free trade in ships, permitting American capitalists to invest in them, with the guaranty of full protection under the flag, would be wise and satisfactory.

To these and many other equally familiar questions or suggestions of like import regarding our merchant marine, apt answers are ready, as varied in their nature as the diverse interests of different localities can suggest. But the fact remains that the American flag is not, as it should be, the most prominent national emblem to be seen in foreign ports where American goods find their most remunerative markets.

And it is also true that the American sailor, of whom tradition has taught Americans to be proud, is gradually disappearing from actual existence.

E. P. BROOKS, *Consul*.

UNITED STATES CONSULATE,
Cork, Ireland, October 6, 1880.

AMERICAN HEATING AND COOKING APPARATUS IN IRELAND.

REPORT BY CONSUL BROOKS, OF CORK.

I have the honor to submit the following suggestions for the benefit of interested trades in the United States:

The average chimney, even in the better classes of dwellings, in Ireland, is supplied at its base with a fire-place better adapted to throwing out smoke and coal-gas than heat; and the chimney itself is so constructed that the draft is oftentimes downwards instead of upwards. It is no exaggeration to say that two-thirds of the open coal-grates in the

houses of the "gentry" in this country are characterized by these peculiarities. The explanation of this is, first, a faulty construction of the flues; and second, an absolute ignorance or neglect of the methods in vogue in the United States, whereby warmth, comfort, and economy are all subserved in the heating arrangements of the ordinary dwelling-house. The coal-grates here are set away back in the fire-place and do not extend beyond the inner line of the hearths, as they should; and there are no protrusions in the chimney, over the grates, by which the heat may be thrown out into the room. The result is that, except when the flue draft is downwards and heat and smoke and gas are alike expelled in a stifling combination from the grate, more than two-thirds of the warmth of the coal-fires escapes up the chimneys.

I do not know whether there are patents upon the different coal-grates used in the United States or not; but I do know that if the comfort and economy to be obtained by their use were once understood here they would become very popular. And the same may be said of the numerous useful and ornamented patterns of coal-burning stoves, base-burners, furnaces, and ranges, as well as of the general systems of heating dwelling-houses which have been carried to such comparative perfection in the United States, and of which so little is known here.

The kind of coal used here is, in my opinion, well adapted for use in American-made stoves, although it is nearly all soft, and the variety known as "nut coal" is not produced.

I submit that an agency for the sale of American heating and cooking apparatus might prove to be a source of profit if established in the proper season, and under proper auspices. In the same connection improvements might be introduced upon the prevailing systems here of supplying bath-rooms and closets with hot and cold water. And I hope I may be believed in the seemingly improbable assertion that the much derided American plumber would be a benefactor here.

E. P. BROOKS, *Consul*.

UNITED STATES CONSULATE,
Cork, Ireland, October 9, 1880.

AMERICAN PORK IN IRELAND.

REPORT BY CONSUL LIVERMORE, OF LONDONDERRY, ON THE COMPETITION OF AMERICAN BACON AND HAMS WITH THE BRITISH AND IRISH ARTICLES.

IMPORTS OF BACON AND HAMS INTO LONDONDERRY.

In conformity with instructions contained in the circular of the Secretary of State, dated on the 1st day of July, 1880, requiring the consuls "to prepare and forward to the department reports upon all subjects which may be calculated to advance the commercial and industrial interests of the United States," "and to give such information as may aid manufacturers, agriculturists, and others to understand the particular wants and requirements of the several markets," I think it is proper that I submit a statement of a few facts, together with some suggestions relating to the trade in bacon and hams.

During the year ending on the 31st of August last, there arrived at this port 3,636 boxes American hams, valued at \$176,709, and 8,962 boxes of American bacon worth \$348,342; in all, \$525,051, and proba-

bly more, yet still a small amount in comparison with the entire sum of those commodities produced in the United States and exported thence.

AMERICAN VS. IRISH BACON AND HAMS.

The fact that seems to demand attention is, that they are retailed here at from one-half to three-fourths the price that is paid for English and Irish bacon and hams, and that a corresponding difference prevails in the wholesale trade by reason of the generally recognized inferiority of the American product. True it is that to some, and to a growing extent, selections are made from the latter, which, after washing and drying, are put upon the market without being distinguished as inferior articles, and perhaps eventually cease to be recognized as American. This is not due to any improper act or concealment on the part of the dealers successively handling the goods, but to the fact that no small quantity of the American is quite as good as the domestic product. Of course the care and skill with which the selection is made are rewarded with a good profit to those who make it.

Still there remains a large proportion of the American bacon and hams, of undoubted inferiority to the rival article, and a prestige is thus created, injurious to those who have succeeded in producing an article that, but for the presence of the bad company in which it is found, would enter upon the competition without fear. The Irish peasant now sells his hog and with the proceeds buys American bacon.

For this inferiority of our goods, one cause assigned is want of skill or fidelity in the process of curing; by reason of which the American meats cannot be kept so long as the British, and the best lots do not yield nearly so large a proportion for special selection, as do the rival lots.

HOG FEEDING IN THE UNITED STATES.

Another cause is said to be the American fashion of feeding the animal on Indian corn exclusively, the consequence of which is said to be that their hams and bacons in the process of cooking melt or fry-out largely, so as to leave a very small and worthless residuum, resembling what is known as scraps. This theory seems sufficiently plausible to demand the attention of those who are engaged in fattening this animal. He is well known, when at liberty, to be choice and dainty beyond most domestic animals in the selection of his food, but easily induced, when in confinement, to consume largely of almost anything thrown to him. But this indiscriminating absorption and assimilation may not of necessity be a healthy function, and it may be worth the experiment to learn whether some variety in the feed, by being more in consonance with the instincts of the animal, may not be attended with desirable results in the particular mentioned.

Climate has been named as another possible cause of the mischief; and in the extreme heat of an American summer it may be important to provide some protection for the prisoner, perhaps uncomfortable from over-feeding. But the hog is found to thrive in nearly every climate in which men are found, and the probability is that the impediments to the successful feeding and curing of pork are quite surmountable, if pains be taken to ascertain and surmount them.

It is certainly an important thing that American productions of various descriptions are introduced into foreign markets at prices that insure a ready sale for them. Yet it is a subject for regret and mortifi-

cation if, through any preventable causes, they appear there only as second rate goods.

ARTHUR LIVERMORE, *Consul.*

UNITED STATES CONSULATE,
Londonderry, Ireland, October 23, 1880.

BRITISH EXPORT TRADE—1880.

REPORT BY CONSUL RICHMOND, OF BELFAST, IRELAND

I have the honor to forward a copy of the circular of the Flax Supply Association for September and the first nine months of 1880, with accompanying tables.

These statistics show a decrease in the exports of linen piece goods to the United States of 17.2 per cent. as compared with September, 1879, while the exports to all other countries show an increase of 20.7 per cent.

LEWIS RICHMOND,
Consul.

UNITED STATES CONSULATE,
Belfast, Ireland, October 13, 1880.

FLAX SUPPLY ASSOCIATION CIRCULAR.

The imports of flax in September, 1880, were under those of September, 1879, by 29.1 per cent. in quantity and 31.0 per cent. in value. The imports during the first nine months of 1880 were, however, 25.5 per cent. in quantity and 31.4 per cent. in value over similar period in 1879.

The exports of yarns mark an increase in quantity and value of 21.3 per cent. and 15.6 per cent., respectively, in September, 1880, in excess of September, 1879, the most prominent increases being to France, of 69.4 per cent. in quantity, and to Spain and Canaries, of 46.8 per cent.

Linen thread repeats a decrease in exports, September, 1880, being under September, 1879, 29.0 per cent. in quantity and 26.8 per cent. in value. The nine months ended September 30, 1880, are, however, 10.2 per cent. in quantity and 17.2 per cent. in value in excess of 1879.

In September, 1880, the exports of linen piece goods were 1.1 per cent. in quantity and 20.8 per cent. in value under September, 1879. It may be observed that the United States of America shows a decrease in exports thereto of 1,198,500 yards, or 17.2 per cent. in quantity, whereas the exports to all other countries mark an increase of 1,062,900 yards, or 20.7 per cent. There is an increase in quantity to British India of 218.4 per cent., to the United States of Colombia of 176.7 per cent., to the Spanish West Indies of 92.8 per cent. On the other hand, there is a falling off of 33.7 per cent. to the British West Indies, 20.8 per cent. to France, 20.6 per cent. to Italy, 19.0 per cent. to Germany, and, as above noted, 17.2 per cent. to the United States of America.

The usual table issued each three months showing the exports of primary articles from the United Kingdom accompanies this circular, and the figures therein indicate an improved condition in the general trade of the country in the nine expired months of 1880 contrasted with 1879. As regards textile manufactures, there is an increase in the exports of cottons of 24.1 per cent. in value, in silks of 16.8 per cent., in jute 15.5 per cent., in woollens 14.0 per cent., in linens 11.1 per cent., and in the general exports of the United Kingdom of 19.1 per cent.

MICHAEL ANDREWS.

10 DONEGALL SQUARE, WEST,
Belfast, Ireland, October 11, 1880.

BRITISH AND IRISH EXPORTS.

Declared value of the exports of the following primary articles of British and Irish produce and manufactures from the United Kingdom for the nine months ended September 30, 1880, compared with corresponding period in 1879.

[Compiled from the Board of Trade returns.]

Articles.	Nine months ended Sep- tember 30, 1879.	Nine months ended Sep- tember 30, 1880.	Increase or decrease.	Percentage.
Iron and steel manufactures	£13,620,474	£22,250,911	*£8,630,437	63.4
Alkali	1,450,465	1,819,390	*368,925	25.4
Cotton manufactures	38,218,204	47,420,754	*9,202,550	24.1
Paper (except hangings)	673,296	792,262	*118,966	17.7
Glass manufactures	573,239	673,822	*100,583	17.5
Silk manufactures	1,298,049	1,515,009	*217,500	16.8
Fute manufactures	1,402,223	1,619,108	*216,885	15.5
Woolen and worsted manufactures	11,878,871	18,542,013	*1,663,142	14.0
Hardware and cutlery	2,241,314	2,547,387	*306,053	13.7
Earthen and china ware	1,300,385	1,473,654	*173,269	13.3
Linen manufactures	4,147,597	4,010,600	*-136,997	11.1
Haberdashery	2,717,499	2,942,407	*224,908	8.3
Stationery (except paper)	478,105	510,695	*32,590	6.8
Beer and ale	1,310,515	1,301,136	*-9,379	0.7
Apparel and shos	2,273,198	2,208,762	*-64,436	2.6
*Increase.		†Decrease.		

STEAM COMMUNICATION BETWEEN LEITH AND THE UNITED STATES.

REPORT BY CONSUL ROBESON.

I beg to report to the department that direct steam communication between this port of Leith and New York has been started. Two steamers of the Unicorn line arrived in Leith from New York on 6th and 15th of February last and returned to the States by way of the Mediterranean. The steamer Croft, of the Excelsior line, arrived in Leith on the 15th February, and sailed on the 3d instant with a full cargo direct for New York City. Other vessels of both lines are looked for in a few days in Leith. The Excelsior line has four steamers, averaging about 1,600 tons each. The tonnage of the vessels of the Unicorn line I have as yet been unable to ascertain. The above information received from Messrs. Hugh Blaik & Co., the agents for both lines at this port, who assure me that the lines will be run regularly and permanently. If such be the case, there can be no doubt that it will create a very considerable improvement in the trade between this port and the United States.

I may mention that the towns of Edinburgh and Leith, which may be said to be one town, have a population of nearly 300,000. This population consumes a large quantity of American produce, consisting of dead meat and live stock, canned goods of all kinds, butter, cheese, lard, and bacon, all of which produce reaches Edinburgh and Leith by way of Liverpool, Glasgow, and Hull.

I am of the opinion that the trade is quite sufficient to support a line of steamers running every fortnight, as the cargoes this way will be all they can carry, and two-thirds of a freight returning. I would not be surprised if a weekly line could be maintained at fair freights. One difficulty is that the marine insurance is likely to be more than from Liverpool or Glasgow. If this line is continued it will be the cause of build-

ing up a good commercial trade between the East of Scotland and the United States.

The port of Leith last year had 1,649 foreign vessels entered, with a tonnage of 587,136, while Glasgow had 746, with a tonnage of 548,084.

The steamer *Croft* was the first vessel of a regularly organized line which left Leith for New York.

The new docks at this port are rapidly approaching completion, and when finished will afford greater facilities for shipping. The extent is 16½ acres of wet dock. I will, at a future date, report further to the department on the effect that the steam communication just started will have on the trade between this port and the United States.

JOHN T. ROBESON, *Consul*.

UNITED STATES CONSULATE,
Leith, Scotland, March 6, 1880.

THE RAILWAY SYSTEM OF SCOTLAND.

REPORT BY CONSUL ROBESON, OF LEITH.

The Scottish railway system, while comprising more than forty distinct companies, is, nevertheless, almost wholly maintained and worked by five of their number, whose lines, the greatest in extent, and passing through the most important mining and agricultural districts, communicate with the leading centers of population and industry throughout the country. Those five companies are North British, the Caledonian, the Glasgow and Southwestern, the Great North of Scotland, and the Highland Railway Company.

These five companies in their own lines represent capital to the extent of \$396,104,378, or 90 per cent. of the whole capital invested in the railways of Scotland. Without having direct financial control over the minor lines those companies are lessees or have working powers over most of them, and the amount invested in the lines so leased or worked over is \$28,718,715, or nearly 7 per cent. of entire capital; \$16,542,051, or about 3 per cent. of the total railway capital of Scotland, are invested in a few short lines, some of which are not yet constructed.

The total length of completed lines of railway in Scotland is 2,864 miles, of which 1,114 miles are double and 1,750 miles single line.

The total length of the lines owned by and leased or worked by the five major companies is 2,804 miles, or 98 per cent. of the total extent of railway lines in Scotland.

The only double lines of any extent are those owned by the North British, the Caledonian, and the Glasgow and Southwestern Companies. The Great North of Scotland and the Highland are especially single lines, having only 7 miles each of double line. The double lines owned, leased, or worked by the three first-named companies extend to 1,094 miles, or nearly 91 per cent. of the total extent of double line. The single line owned, leased, or worked by the same three companies amount to 1,022 miles, or 60 per cent. of the total extent of single line.

THE NORTH BRITISH RAILWAY.

Having its chief terminus and head office in the metropolis of Scotland, the North British Railway system, which includes, with the main line, upwards of nine minor lines leased to or worked by the North British Company, stretches along a great part of the coast: north as far as

Aberdeen, where the Great North of Scotland Railway has its principal terminus, and south to Berwick, joining the Great Northern (of England) Railway, across west to the Clyde, throughout much of the intermediate country, and extending southwards by the Waverly route through the manufacturing towns of Galashiels and Harwick, on to Carlisle and to Port Carlisle and Silloth on the coast of Cumberland. A branch of the Waverly route extends also from Riccarton to Hexham and Morpeth. Altogether, the length of line owned by or leased and worked by the North British is 940 miles, upwards of 404 of which are double and 536 miles single line.

The severe commercial depression which, for a long period, has been very generally experienced has shown its effects very markedly in the accounts of most of the Scottish lines of railway during the past year; and the North British Company have suffered like others in a decrease of revenue, and consequently of dividends. In 1878 the results were more favorable, showing an increase of gross revenue as well as a marked rise in the ordinary dividend; but with the recent adverse experience, and with an ordinary stock so sensitive to slight fluctuations of revenue, a dividend upon that stock in the past year was not to be looked for.

The total paid-up capital of the North British Railway Company is thus shown:

Ordinary	\$18,788,360
Edinburgh and Glasgow ordinary	11,789,023
Total ordinary capital	\$30,577,383
Preferential	79,648,920
Loans and debenture stock	35,393,359
Total	145,619,662

The ordinary stocks, amounting to nearly a fifth of the entire capital, have yielded no dividend in the past year. In 1878 the dividend on North British ordinary was 2½ per cent. and on Edinburgh and Glasgow ordinary ½ per cent. On Edinburgh and Glasgow ordinary stock a dividend only begins to accrue when the dividend on North British ordinary capital amounts to 3 per cent., it then goes on increasing ratably with the dividend on that capital.

On preferential capital, representing fully more than one half of the total amount, the dividend of 1879 averages 3.56 per cent.

From loans and debenture stock, amounting to one-fourth of entire capital, the average rate of interest derived was 4.14 per cent. And on the whole capital the average rate of dividend or interest paid in 1879, as calculated upon the amounts and rates contained in the annual returns and shown in Table 3, was 2.95 per cent.

As illustrating the fluctuations which ordinary stock has sustained during the past eight years, the following tabulated statement is given, exhibiting the dividend on that stock each half-year of that period, and the price after announcement:

Date.	Per cent.	Price.	Date.	Per cent.	Price.
September, 1879	0	\$330 02	March, 1880	0	\$378 37
September, 1878	2½	464 75	March, 1879	3½	404 53
September, 1877	2	433 12	March, 1878	2½	419 74
September, 1876	3½	453 80	March, 1877	4	496 58
September, 1875	4	501 25	March, 1876	4½	512 20
September, 1874	0	294 42	March, 1875	1½	350 30
September, 1873	0	316 32	March, 1874	0	309 03
September, 1872	1½	384 45	March, 1873	½	306 50

On September 1, 1880 (date of this report), the closing price of North British ordinary was \$384.24, and of the Edinburgh and Glasgow ordinary, \$148.43. Original price, \$486.65.

Table No. 2 exhibits the entire capital invested in the lines comprised in the North British railway system—being the capital of the North British Company, as set forth in the foregoing remarks, and that of the lines leased to or worked by it—and shows the proportion of each description of stock to the entire capital.

The total receipts from passenger and goods traffic in 1879 have been less than those of 1878 by \$86,882. In 1878, owing to the fine weather and the early movement of agricultural produce, the traffic was unusually heavy. In 1879, on the contrary, with a bad season and increased depression of trade, the traffic was much reduced; and, although the North British must have benefited with other lines in the reduction of working costs, in fuel, material, and wages, there has been an increase of \$9,207 in the traffic expenses.

The decline in passenger traffic during past year amounted to \$236,332. This heavy decrease was, nevertheless, to a considerable extent compensated by a gain in the goods and in mineral traffic, the increase on which was \$149,450.

The mineral tonnage moved in 1879 was 7,743,796 tons, being an increase of 620,313 tons over the amount in 1878.

The tonnage of general merchandise moved was 2,475,616 tons, being a decrease of 21,967 tons from the amount in 1878.

Further details relative to traffic are given in Tables Nos. 7, 8, and 9; and Table No. 10 shows the number of locomotives, carriages, and other vehicles in use, and their proportion to the mileage open.

THE TAY BRIDGE.

The calamity which occurred on the 28th of December, 1879, in the fall of a large portion (nearly three-quarters of a mile) of the railway bridge which spanned the Firth of Tay at Dundee, whereby seventy six people lost their lives and immense loss was sustained by the North British Company, is one which for magnitude is unparalleled in railway annals, and claims special notice.

The Tay bridge was 10,410 feet in length, or two miles, less fifty yards. It consisted of eighty-five spans and carried a single line of rails. Those termed "the high girder span" were thirteen in number, each 245 feet long, extending over that part of the estuary commonly used for navigation. There the greatest height from the level of the rails to high-water mark in spring tides was 92 feet—this occurred at the center of those spans, from which point there was a gently descending gradient north and south. In the disaster that happened the whole extent of those high girder spans fell, together with the train as it entered upon it. The structure was commenced on the 27th of August, 1875, and opened for traffic on May 31. 1878.

The original capital of the Tay bridge was \$1,703,275, a large portion thereof being subscribed by the directors and shareholders of the North British Railway; and to further the scheme the North British Railway Company gave a subscription, redeemed last year, of \$416,085. Of the share capital one-third, or \$567,434, was afterwards borrowed, making the whole capital \$2,270,709. A dividend of 5½ per cent. was guaranteed to the proprietors of the stock, but on the successful opening of the bridge the undertaking was purchased by the North British Company and incorporated into their general system, and since then the capital has been merged in the 4 per cent. consolidated lien stock.

As indicating the estimate at once formed of the disaster in share transactions, it may be stated that there followed an immediate depreciation of nearly \$48 per share in the price of ordinary stock; but, after the shock caused by the news of the event had passed, more confidence was shown. On Monday, 29th December, 1879, the day after the catastrophe occurred, the depreciation was limited to ordinary and Edinburgh and Glasgow stocks, and the consolidated lien stock, the fall in which amounted to \$2,968,565. There was a further heavy fall on 3d January, 1880, in ordinary and a partial fall in preferences, the depreciation amounting to \$5,353,150. Subsequently ordinary stock advanced considerably while preferences declined. On 19th January, the price of North British ordinary was \$352.82, which is \$15 over the first fall after the Tay bridge accident, and fully \$34 over the lowest prices thereafter.

The North British Company resolved to rebuild the bridge on a lower level, and a bill was accordingly promoted in Parliament with the view of obtaining sanction for the capital necessary in part for such object. At the same time an inquiry into the circumstances of the accident was instituted by the board of trade, and the report which followed resulted in the bill being referred to a special committee of the House of Commons, who decided that the bridge should be reconstructed on the present site, but they did not feel justified in sanctioning the scheme proposed by the bill. Under these circumstances the directors submitted the whole question of the mode of reconstruction for the consideration of Mr. Barlow, C. E., president of the Institute of Civil Engineers, who sat as one of the board of trade commissioners at the inquiry, and on his report it is intended to frame the bill in respect of which powers will be sought during the next session of Parliament.

THE FORTH BRIDGE.

The success which had attended the opening of the Tay bridge influenced the North British Company to promote a scheme for bridging the Forth at Queensferry, and so complete the direct communication with Aberdeen and other parts in the north of Scotland. Four railroad companies co-operate with the North British in the formation of the Forth Bridge Company, and according to a circular which was issued to the undertaking, its proposed share capital is \$6,083,155, of which \$5,431,014 will be asked in the issue of 111,600 shares of \$48.66 each, allotted at a premium of \$9.73 per share, and payable in five calls at intervals of a year, five per cent. interest to be paid during the erection of the bridge, and six per cent. after it is opened for traffic. An annuity of \$364,987 per annum on the above issue of capital is guaranteed.

The original plans of the Forth bridge have as their prominent features great width of single spans and height of chain towers. The two principal spans of 1,600 feet each (five feet more than the suspension bridge between New York and Brooklyn), were to be suspended from towers nearly 600 feet high, and the entire length will be a mile and a half. They were designed by Sir Thomas Bouch, the engineer of the Tay bridge.

The Tay bridge disaster influenced the directors of the Forth Bridge Railway Company to have the whole plans of the proposed bridge reconsidered, to modify the dimensions to some extent, and to adopt such improvements on the original design as might be decided on after obtaining opinions on the subject from the highest authorities. They ac-

cordingly determined that the structure should be lowered 15 feet, the reduction being made from 150 to 135 feet above high-water mark; meanwhile, until the plans are reconsidered, the construction of workshops, which has been begun at Queensferry for use in relation to the Forth bridge, has been entirely suspended.

In the foregoing remarks on the North British Company, it has been deemed necessary to make special reference to the Tay bridge and to the disaster which happened to it in December, 1879. Reference has also been made to the Forth bridge on account of that gigantic undertaking being an essential adjunct to the Tay bridge in the North British system. But apart from these considerations, the Tay bridge and the Forth bridge have been held deserving of special notice in this report as being two of the most important works of the kind in Europe, and affording further illustration of the enterprise and progress of the North British Railway Company.

THE CALEDONIAN RAILWAY.

The Caledonian Railway has its principal terminus and head office in Glasgow. Including upwards of twelve lines of railway leased to it, or on which it has working powers, the Caledonian system extends over a large portion of the interior between the Forth and the Clyde and throughout valuable mineral districts, onwards east to Edinburgh, where it has termini at the west end of the city and at Waverly Bridge station; extending north as far as Aberdeen, and south to Carlisle, joining the London and Northwestern Railway. Recently, also, an important branch line to Oban has been opened, communicating with the Caledonian station at Callander. The whole extent of line now owned by or leased and worked by the Caledonian Company is 851 miles, of which 460 miles are double and upwards of 391 miles single line.

The entire paid up capital of the Caledonian Company is as follows:

Ordinary.....	\$49,910,955
Deferred ordinary stock No. 1.....	12,201,854
Deferred ordinary stock No. 2.....	1,344,823
<hr/>	
Total ordinary capital.....	63,457,632
Guaranteed and preferential.....	69,739,412
Loans and debenture stock.....	33,846,391
<hr/>	
Total.....	167,043,435

On ordinary stock—nearly one-third of entire capital—the dividend in past year has been 2½ per cent. In 1878 the dividend was 1½ per cent.

On ordinary deferred stock No. 1, which is only entitled to participate *pari passu* in all Caledonian ordinary dividends above 7 per cent., there is no dividend. On ordinary deferred stock No. 2, which is only entitled to participate *pari passu* in all Caledonian ordinary dividends above 9 per cent., there is also no dividend.

The guaranteed and preferential stock, nearly three-eighths of entire capital, has yielded dividend in past year averaging 4.41 per cent.

Loans and debenture stock amount to one-fifth of total capital, and the average of interest paid on these in 1879 is 3.97 per cent.

The average rate of dividend or interest upon the whole capital of the Caledonian Company for 1879, calculated upon the amounts and rates as contained in Table No. 3 of appendix, is 3.47 per cent.

The following are the half-yearly dividends and the quotations of stock, after announcement, for the past eight years :

Date.	Per cent.	Price.	Date.	Per cent.	Price.
September, 1879	2½	\$438 80	March, 1880	2	\$537 75
September, 1878	4½	538 96	March, 1879	4½	467 12
September, 1877	6½	607 09	March, 1878	6	568 96
September, 1876	6½	603 45	March, 1877	7	608 21
September, 1875	6½	622 91	March, 1876	7½	647 24
September, 1874	2	447 72	March, 1875	5½	515 85
September, 1873	3½	462 82	March, 1874	4½	472 05
September, 1872	8	574 86	March, 1873	3½	437 90

The closing price of Caledonian ordinary on September 1, 1880, was \$555.39, and of Caledonian deferred No. 1, \$71.78.

The entire capital invested in the lines comprehended in the Caledonian system is shown in Table No. 2, as also the proportion of each class of stock to the entire capital.

Traffic receipts show a decrease of \$728,155 from amount in 1878. The proportion of decrease is slightly greater in receipts from passenger than goods traffic.

The goods and mineral traffic is the staple source of income to the Caledonian Company. Despite the bad times of 1878 and 1879, and their effects on all railway receipts, the amount derived by the Caledonian Company from their goods and mineral traffic in 1879 was as much as \$8,012,799, which is considerably over the amount earned by any other line in Scotland for such traffic in same period; the Caledonian goods and mineral traffic of past year is nearly double the amount received from passengers.

Tables Nos. 7, 8, and 9 supply further particulars regarding traffic, and No. 10 exhibits the number of locomotives, carriages, and other vehicles used, and the number per open mile.

THE GLASGOW AND SOUTHWESTERN RAILWAY.

The main terminus and head office of the Glasgow and Southwestern Railway Company are at St. Enoch station, Glasgow. Proceeding from Glasgow west to Paisley and Greenock, southwards coastwise to Millport, Ardrossan, Irvine, Ayr, Maybole, and Stranrear, and inland to Kilmarnock, Dumfries, and Carlisle; at the latter place the Glasgow and Southwestern Railway joins the Midland (English) line. The Ayr and Maybole and the Kilmarnock and Troon lines are leased to or worked by the Glasgow and Southwestern Company. The entire length of line owned by or leased and worked by this company is 325 miles, upwards of 230 miles of which are double and 95 miles single line.

The following statement shows the entire paid-up capital of the Glasgow and Southwestern Company:

Ordinary capital	\$23,980,701
Guaranteed and preference capital	12,311,734
Loans and debenture stock	11,262,877
Total	47,555,312

The ordinary capital—which is about one-half of entire capital—had yielded in past year a dividend of 3½ per cent. In 1878 the dividend was 3¼ per cent.

The guaranteed and preferential capital is rather more than one-fourth of total amount of capital, and the dividends therefrom in past year aver-

age of interest accruing in 1879 is 4.95 per cent. On loans and debenture stock, representing nearly a fourth of entire capital, the average of interest accruing in 1879 is 4.01 per cent. And on the entire capital the average rate of dividends or interest paid in 1879 is 3.93 per cent.

The following are the half-yearly dividends and the prices of stock on announcement during the last six years:

Date.	Per cent.	Price.	Date.	Per cent.	Price.
September, 1879	2½	\$401 49	March, 1880	4	\$414 08
September, 1878	2½	469 62	March, 1879	3	417 89
September, 1877	4	520 73	March, 1878	4	489 08
September, 1876	4	510 98	March, 1877	4½	523 06
September, 1875	4	535 32	March, 1876	3½	484 22
September, 1874	2½	484 22	March, 1875	3½	473 05

The closing price of ordinary shares of the Glasgow and Southwestern Company on September 1, 1880, was \$566.95.

There is a decrease of \$92,901 in traffic receipts from the amount in 1878. The decrease on passenger traffic is upwards of \$118,601, while there is an increase of \$25,700 on goods traffic.

As a set-off to such decrease in receipts it is satisfactory to find a decrease of \$239,519, in the working expenditures.

In tables Nos. 7, 8, and 9 additional particulars are given in respect of traffic, receipt and expenditure, and Table No. 10 shows full details regarding rolling-stock.

THE GREAT NORTH OF SCOTLAND RAILWAY.

The head office of this company is at Waterloo Station, Aberdeen, and there also is its southern terminus, connected with which are the main arteries of the Scottish railway system. From Aberdeen the line reaches northward by separate branches to the coast towns of Peterhead, Fraserburgh, and Banff, and by the main line to Inverurie, Hantly, Keith, and Elgin. From Keith a branch goes southwest along the river Spay to Boat of Garten on the Highland line. Westward from Aberdeen a branch extends to Ballater, from which a coach route connects it with Blairgowrie, the northern terminus of a branch of the Caledonian system.

The total length of the Great North of Scotland system, which includes but one leased line—the Morayshire—is 286 miles, seven miles only of which are double, and 279 miles single line.

The total capital of the Great North of Scotland Railway Company is as follows:

Ordinary	\$4,272,373
Guaranteed and preferential	10,135,990
Loans and debenture stock	4,656,301
Total	19,064,664

Ordinary stock, which is only about a fifth of total capital, in 1879 has been paid 1 per cent. In 1878 there was no dividend. More than half of gross capital consists of guaranteed and preference stock, which has been paid an average dividend of 4.22 per cent.

One-fourth of the entire capital is in loans and debenture stock. The average interest paid on this in past year is 4.18 per cent.

On the whole capital of the Great North of Scotland Railway the average rate of dividend and interest paid for past year, calculated upon

the amounts and rates contained in Table No. 3 of Appendix, is 3.49 per cent.

The following are half-yearly dividends during the past eight years:

Date.	Per cent.	Date.	Per cent.
September, 1879	1	March, 1880	1
September, 1878	NIL.	March, 1879	NIL.
September, 1877	2 $\frac{1}{2}$	March, 1878	1 $\frac{1}{2}$
September, 1876	2	March, 1877	1 $\frac{1}{2}$
September, 1875	2	March, 1876	2
September, 1874	NIL.	March, 1875	1
September, 1873	NIL.	March, 1874	NIL.
September, 1872	NIL.	March, 1873	NIL.

On September 1, 1880, the closing price of ordinary shares was \$313.28.

There has been a decrease of \$9,923 in traffic receipts during the past year, the passenger traffic having declined by 12,643, while there was an increase of \$2,720 in goods traffic. At same time a decrease has occurred of \$46,781 in the working expenditure.

Further details regarding the traffic during 1879 are given in Tables Nos. 7, 8, 9, and 10 of Appendix.

THE HIGHLAND RAILWAY.

At Inverness this Highland Railway Company have their chief office and terminus. From Inverness the line extends to Dingwall; thence one branch continues northward through Tain on to Wick and Thurso, and another branch extends from Dingwall west to Strone Ferry. From Inverness also the main line proceeds, via Nairn and Forres southward through the most central part of the Highland on to Perth, its southern terminus, and is connected with the various lines converging there.

Included in the Highland railway system with the main line are four lines leased to or worked by the Highland Company, namely, the Dingwall and Skye, the Duke of Sutherland's (which is private property), the Sutherland, and the Sutherland and Caithness lines.

Four hundred and two miles is the entire length of the Highland railway system, inclusive of the minor lines. Seven miles only of that extent are double, and 395 miles are single line.

The capital of the Highland Railway Company is as follows:

Ordinary	\$7,603,133
Guaranteed and preferential	5,322,637
Debenture stock	3,895,535
Total	16,821,305

Ordinary capital—nearly one-half of the total capital—in past year has been paid 3 $\frac{1}{2}$ per cent. In 1878 the dividend was 4 $\frac{1}{2}$ per cent. The price on September 1, 1880, was \$515.85.

The amount of guaranteed and preferential is about one-third of entire capital, the average dividend on which was 4.89 per cent. in 1879.

Debenture stock is nearly one-fourth of total capital, and has been paid an average interest of 4.12 per cent.

The average rate of dividend and interest paid on the whole capital in past year was 4 $\frac{1}{2}$ per cent.

There has been a decrease in past year of \$65,639 in passenger traffic, and \$23,028 in goods traffic. Working expenditure has been decreased by \$39,564.

OTHER COMPANIES.

The railway companies referred to under this head, and not included under any of the leading groups or systems stated in Appendix, are only eight, three of which have completed and working lines. These latter are the City of Glasgow Union, the Girvan and Portpatrick Junction, and the Wigtownshire. The remaining five are the Alloa Railway, not yet constructed; the Findhorn, at present dormant; the Forth Bridge, not yet constructed; the Leven Harbor, in course of construction, and the North British, Arbroath and Montrose, also being constructed. Of those lines 60 miles are open and being worked, of which 6 miles are double and 54 miles are single line. (*Vide* Table No. 1.)

The capital invested in those eight companies is as follows:

Ordinary capital	\$5, 046, 911
Guaranteed and preferential.....	9, 418, 215
Loans and debenture stock.....	2, 076, 925
Total	16, 542, 051

RAILWAY EXTENSION.

The length of lines open for traffic throughout Scotland at the close of the year 1879 is shown in Table No. 1 of Appendix to this report. The entire length in 1879 was 2,864 miles, which is an increase of 19 miles over the total number in 1878. The percentage of increase in each of the two previous years was greater, being 1.8 per cent. in 1877, and 2.5 per cent. in 1878, although less than in the year 1874, when the increase was as high as 3.4 per cent.

Of the total extent in 1879, upwards of 1,114 miles were laid with double lines of rails and 1,750 miles with a single line; and compared with corresponding details for 1878, the increase of 6 miles of double lines and 13 miles of single lines.

As showing the progress of railway construction in Scotland, it is worthy of mention that in the year 1858 only 1,323 miles of railway had been opened for traffic, and in 1873 the extent was 2,612 miles, being an increase of 1,259 miles, or 90.3 per cent. in the fifteen years; and the following figures exhibit the advance made yearly since 1873:

Year.	Extent of lines open.	Increase.	
		Miles.	Per cent.
1874.....	2, 700	88	3.4
1875.....	2, 721	21	0.8
1876.....	2, 728	5	0.2
1877.....	2, 776	50	1.8
1878.....	2, 845	69	2.5
1879.....	2, 864	19	0.6

CAPITAL AND DIVIDENDS.

The total paid-up capital of the railways in Scotland at end of year 1879 was \$441,365,144. Compared with previous year, when the amount was \$424,305,599, there is an increase of \$17,059,545, or about 4 per cent. This rate of increase is higher than that of the mileage open for traffic, and admits of the conclusion that much of the increased capital is expended on lines already open.

The increase in 1879 has arisen chiefly in the guaranteed and preferential, as distinguished from the ordinary capital and the loans and debenture stock. In 1879 the amount of guaranteed and preferential

capital was \$190,665,985, being an increase of \$14,341,171 over the amount as in 1878. At same time the amount of loans and debenture stock was \$96,202,276, or an increase of \$335,720 as compared with 1878. These together make an increase of \$14,676,891, out of the increase of \$17,059,545 in the whole capital, as already shown. Ordinary capital in 1879 was \$154,496,883, which amount, compared with that of 1878, leaves an increase of only \$2,872,654.

It will be seen by the following table that ordinary capital increases very slowly in comparison with the guaranteed and preferential capital. Indeed, its relative proportion has, in 1879, slightly receded from the proportion it had maintained for previous three years, while the amount of loans and debenture stock has markedly decreased. In 1874 the ordinary capital constituted about 33 per cent. of entire capital. In 1876 it had advanced to 36 per cent., and so remained in 1877 and 1878, but now is 35 per cent. In same period, the table shows that guaranteed and preferential stock had advanced from 40 to 43 per cent., while loans and debenture stock had diminished from 27 to 22 per cent.

Amount of ordinary, guaranteed, preferential, and loan capital, and proportion, per cent., of each to the total capital of railway companies in Scotland in each of the years from 1874 to 1879.

Year.	Ordinary.		Guaranteed and preferential.		Loans and debenture stock.		Total.	
	Amount.	Proportion to total capital.	Amount.	Proportion to total capital.	Amount.	Proportion to total capital.	Amount.	Proportion to total capital.
		Pr.cent.		Pr.cent.		Pr.cent.		Pr.cent.
1874.....	\$115,361,974	35	\$139,944,787	40	\$91,806,766	27	\$347,113,527	100
1875.....	119,730,397	34	144,003,302	40	90,969,198	26	354,702,892	100
1876.....	143,868,081	36	166,709,165	41	91,977,020	28	402,554,266	100
1877.....	147,379,451	36	172,444,022	42	93,462,266	23	413,285,739	100
1878.....	152,114,229	36	176,324,814	42	95,866,556	23	424,305,599	100
1879.....	154,496,883	35	190,665,985	43	96,202,276	22	441,365,144	100

Table No. 4, in Appendix, exhibits in detailed form the different amount of capital at the various rates of dividend or interest paid to it. As regards ordinary capital, amounting to \$154,500,000, the analysis shows that \$55,000,000 of capital received no dividend; \$6,250,000 of capital received not more than 1 per cent.; \$1,250,000 received 1 to 2 per cent.; \$54,500,000 received 2 to 3 per cent.; \$32,750,000 received 3 to 4 per cent.; \$2,000,000 received 4 to 5 per cent.; \$1,000,000 received 5 to 6 per cent.; \$1,000,000 received 6 to 7 per cent.; and \$750,000 received 8 per cent.

It appears from this that the largest part of the capital receiving dividend has received from 2 to 3 per cent., and only a small portion had over 4 per cent.; hence an average rate of only 1.92 per cent. In 1878 the ordinary capital was \$152,000,000, of which \$47,000,000 received dividends ranging from 2 to 4 per cent., and \$58,500,000 received dividends from 4 to 5 per cent., while \$28,000,000 received no dividend. The proportion receiving no dividend has doubled during 1879.

Of guaranteed and preferential capital, amounting to \$190,500,000 the results shown are, that \$5,750,000 received no dividend; \$500,000 received not more than 1 per cent.; \$11,000,000 received 1 to 2 per cent.; \$4,500,000 received 2 to 3 per cent.; \$97,000,000 received 3 to 4 per cent.; \$58,500,000 received 4 to 5 per cent.; \$6,750,000 received 5

to 6 per cent.; \$5,500,000 received 6 to 7 per cent.; and the remainder, about \$1,000,000, received upwards of 7½ per cent. Here it is obvious that the bulk of the capital is paid nearly the average rate.

Of loans and debenture stock, amounting to \$96,000,000, the results are that \$250,000 received 2 to 3 per cent.; \$78,500,000 received 3 to 4 per cent.; \$17,500,000 received 4 to 5 per cent.

In further illustration of the proportions of the several descriptions of capital receiving dividends or interest at different rates, the following detailed comparison of the facts now stated is subjoined:

Statement of the rates of dividend and interest paid on the undermentioned ordinary and preferential capital and loans and debenture stock for the year 1879.

Rate of dividend or interest.	Ordinary capital.		Guaranteed and preferential capital.		Loans and debenture stock.	
	Amount of capital.	Per cent. of total.	Amount of capital.	Per cent. of total.	Amount of capital.	Per cent. of total.
Nil.....	\$54,928,575	35.5	\$5,741,779	2.0	.....	.....
Not above 1 per cent.....	5,272,709	4.1	11,070	.....	.....	.....
Above 1 and not over 2 per cent.....	1,323,309	0.9	11,143,611	5.9	.....	.....
Above 2 and not over 3 per cent.....	54,683,970	35.4	4,424,047	2.8	\$357,873	0.4
Above 3 and not over 4 per cent.....	32,776,125	21.2	96,940,476	50.8	78,422,032	81.5
Above 4 and not over 5 per cent.....	1,946,600	1.3	58,895,157	30.9	17,422,572	18.1
Above 5 and not over 6 per cent.....	924,392	0.6	6,739,806	3.5	.....	.....
Above 6 and not over 7 per cent.....	880,301	0.5	5,554,297	2.9	.....	.....
Above 7 and not over 8 per cent.....	760,903	0.5	1,167,960	0.7	.....	.....
Total.....	154,496,883	100	190,665,985	100	96,202,276	100

TRAFFIC, REVENUE, AND EXPENDITURE.

Tables Nos. 5, 6, and others in Appendix, furnish particulars regarding the traffic, revenue, and working expenses of the railway system in Scotland.

There has been decrease of receipts both in passenger and goods traffic. From passenger traffic the receipts amounted to \$12,083,656, or \$750,779 less than in 1878. From goods traffic the receipts amounted to \$18,986,761, or \$385,320 less than in 1878.

The number of miles traveled by passenger trains was 12,024,927, or 369,841—equal to 3.17 per cent.—more than in 1878. The number of miles traveled by goods and mineral trains was 13,695,029, or 27,527—0.2 per cent.—less than in 1878.

Accordingly, the receipts per train mile from passenger traffic have fallen from \$1.0102 in 1878 to \$0.9224 in 1879, while the receipts from goods traffic per train mile have fallen from \$1.3565 in 1878 to \$1.3330 in 1879.

Compared with 1875, when the receipts from passenger traffic per train mile were \$1.1221, the decrease is more remarkable, there being a diminution of \$0.1997 in the five years. In the same period the proportion of decrease in receipts per goods train is less, the receipts having been \$1.3563 in 1875, so that the decline in the five years is only \$0.0233.

Examination of the data relative to passenger traffic serves to show that the decline of receipts in the past year is proportionately less from third than from a first or second class. Thus:

From first-class passengers in 1879 the receipts were \$2,123,064, in 1878 \$2,336,684; decrease, \$213,620.

From second-class passengers in 1879 the receipts were \$853,954, in 1878 \$1,024,316; decrease, \$170,362.

From third-class passengers in 1879 the receipts were \$6,665,436, in 1878 \$6,981,111; decrease, \$315,675.

From season tickets in 1879 the receipts were \$581,873, in 1878 \$587,644; decrease, \$5,771.

From excess luggage, &c., in 1879 the receipts were \$1,859,329, in 1878 \$1,904,680; decrease, \$45,351.

It therefore appears that there is a marked decline in the aggregate of first and second class traffic, and comparatively slight diminution in that of class third.

The journeys of first-class passengers in 1879 were 4,735,893, in 1878 4,815,298; decrease, 79,405.

The journeys of second-class passengers in 1879 were 3,171,505, in 1878 3,578,233; decrease, 406,728.

The journeys of third-class passengers in 1879 were 34,770,308, in 1878 34,766,885; increase, 3,423.

The holders of season or periodical tickets in 1879 were 28,139, in 1878 27,503; increase, 636.

Thus while the first-class journeys have decreased more than $1\frac{1}{2}$ per cent., and the second-class as much as $11\frac{1}{2}$ per cent., there has been a slight increase in the journeys of third-class passengers.

Apart from the consideration that such results may be to a great extent caused by the general depression experienced in 1879, they nevertheless appear suggestive of the conclusion that two classes in the passenger traffic might be found sufficient for all requirements, and that were there only two classes a saving would be effected.

Proceeding in like manner with receipts from goods traffic the decrease is shown as follows:

Receipts from mineral traffic are \$8,548,241, or \$271,789—3.1 per cent. less than in 1878.

Receipts from general merchandise traffic are \$9,603, or \$70,764—0.7 per cent. less than in 1878.

Receipts from live stock traffic are \$794,626, or \$53,537—6.3 per cent. less than in 1878.

The total, including receipts from goods traffic not classified (\$40,246) is \$18,986,761, or \$385,320—2 per cent. less than in 1878.

The mineral tonnage has increased in the past year from 21,237,596 tons to 22,161,743 tons, or 4.3 per cent.

The tonnage of general merchandise has increased from 6,685,442 tons to 6,713,368 tons, or 0.4 per cent.

The total tonnage conveyed in 1879 was 28,875,111, the receipts for which were \$18,986,761. For a total tonnage in 1878 of 27,923,038, the receipts were \$19,372,081.

Table No. 9 shows in detail the expenditure per train mile under the different sections of maintenance of way, locomotive power, general charges, &c. As regards the total expenditure per train mile, it will be observed in the following list of rates for the years 1873 to 1879 that the expenditure in 1879 is very much below any previous year in the series.

1873.....	\$0.6612
1874.....	0.6914
1875.....	0.6594
1876.....	0.6604
1877.....	0.6657
1878.....	0.6328
1879.....	0.6042

Table exhibiting in detail a comparison of the expenditure per train mile in the years 1878 and 1879.

Description.	Cost per train mile.		Increase and decrease in 1879.	
	1879.	1878.	Increase.	Decrease.
Maintenance of way	\$0. 1298	\$0. 1423	.....	\$0. 0125
Locomotive power	0. 1405	0. 1444	.....	0. 0039
Repairs and renewals of rolling stock	0. 0681	0. 665	\$0. 0016	.....
Traffic charges	0. 1768	0. 1855	.....	0. 0089
General charges	0. 0262	0. 0280	0. 0002	.....
Rates, taxes, and government duty	0. 0377	0. 0387	.....	0. 0010
Miscellaneous	0. 0253	0. 0294	.....	0. 0041
Total	0. 6042	0. 6328	.....	0. 0286

In the past year wages and materials have been low, and the lines have been worked economically, but with the stimulus which trade has acquired, and with the consequent increase of traffic, the rate of expenditure will probably be greater in the current year.

Economy might with advantage be exercised in reducing the competition that exists between rival companies, and lessening the train service in many places. Endeavors have been made on repeated occasions in such direction, and meetings of representations from the respective companies have been held with the view of effecting an arrangement for obviating the evil, but as yet no satisfactory arrangement has been reached.

The following is a statement of the capital per mile of railway open:

North British, including leased and worked lines	\$161,402
Caledonian, including leased and worked lines	216,219
Glasgow and Southwestern, including leased and worked lines	147,440
Great North of Scotland, including leased and worked lines	69,197
Highland, including leased and worked lines	53,220
Other companies, including leased and worked lines	275,502
Total, Scotland	154,107

This high rate per mile for Scotland is mainly accounted for in the heavy outlay for land in populous districts, and by reason of the expense incurred promoting bills in Parliament.

SUMMARY.

In concluding this report, the principal facts as to 1879 compared with those of 1878 are brought together in the following summary table:

Summary of the mileage, capital, traffic receipts, working expenses, and net earnings of the railways in Scotland in 1879 and 1878 compared.

Description.	1879.	1878.	Increase in 1879.		Decrease in 1879.	
			Amount.	Per cent.	Amount.	Per cent.
Mileage	2,864	2,845	19	0.6		
Double or more mileage	1,114	1,108	6	0.5		
Capital	\$441,365,144	\$424,305,590	\$17,059,545	4.0		
Capital per mile open	154,107	149,138	4,969	3.2		
Ordinary capital	154,496,883	152,114,229	2,382,654	1.5		

Summary of the mileage, capital, traffic receipts, &c.—Continued.

Description.	1879.	1878.	Increase in 1879.		Decrease in 1879.	
			Amount.	Per cent.	Amount.	Per cent.
Receipts:						
Passenger	12, 083, 656	12, 884, 435			\$750, 779	5.8
Goods	18, 986, 761	19, 372, 081			385, 320	2.0
Miscellaneous	1, 481, 046	1, 406, 442	\$14, 604	1.0		
Total	32, 551, 463	33, 672, 958			1, 121, 495	3.3
Working expenditures	16, 539, 005	17, 406, 093			507, 088	3.2
Net earnings	15, 712, 458	16, 266, 865			554, 407	2.4
Receipts per train mile from passenger and goods traffic	\$1. 1448	\$1. 2020			\$0. 0572	4.7
Expenditure per train mile, exclusive of harbor and other expenses.	0. 6042	0. 6328			0. 0286	4.5
Net earnings per train mile ...	0. 5406	0. 5692			0. 0286	5.0
Percentage of net earnings on capital	3. 56	3. 83			0. 27	7.0
Dividend paid on ordinary capital ...	1. 92	2. 83			0. 91	32.1

These figures exhibit the final result of railway working in Scotland in the year 1879, and may be briefly stated as follows: The extent of the entire system has been increased only 0.6 per cent. during the year, the double mileage having increased 0.5 per cent. At the same time the capital has increased 4.0 per cent., and the capital per mile open has increased 3.2 per cent. The ordinary capital has increased in a less ratio than the total capital, such increase being only 1.5 per cent. There is a decrease in the gross receipts of 3.3 per cent., while the working expenditure has also decreased 3.2 per cent.—hence a decrease of 3.4 per cent. in the net earnings. The receipts and expenditures per train have both decreased, the former by \$0.0572 and the latter by \$0.0286, so that there is a decrease in the net earnings of \$0.0286 per train mile. The results are, a decline in the percentage of net earnings from 3.83 to 3.56 per cent., and a decrease of the average dividend on ordinary capital from 2.83 to 1.92 per cent. Such results in 1879, following a year which was also unpropitious, may be deemed more than usually unfavorable for shareholders; but, as the tide of commercial prosperity appears to have returned, imparting new life into all industries throughout the country, and consequently adding materially to the railway traffic, and as there is now the prospect of an abundant harvest this season, there is every reason for hopefully looking forward to much better results in the railway accounts of the current year.

JOHN S. ROBESON, *Consul.*

UNITED STATES CONSULATE,
Leith, Scotland, September 1, 1880.

APPENDIX TO CONSUL ROBESON'S REPORT.

[NOTE.—The receipts from navigation, tolls, rents, and other miscellaneous sources, and the expenditure for steamboats, canals, and docks, are not included in any of the following ten tables.]

No. 1.—Length of railways open for traffic on December 31, 1879.

Description.	Length of lines in miles open.		
	Double or more.	Single.	Total.
North British, including leased and worked lines.....	404	536	940
Caledonian, including leased and worked lines.....	460	891	851
Glasgow and South Western, including leased and worked lines.....	230	95	325
Great North of Scotland, including leased and worked lines.....	7	279	286
Highland, including leased and worked lines.....	7	395	402
Other companies, namely:			
City of Glasgow Union	6		6
Girvan and Portpatrick.....		34	34
Wigtownshire.....		20	20
Total.....	1,114	1,750	2,864

No. 2.—Amount of ordinary, guaranteed and preferential, and loan capital, and proportion of each to the total capital of railway companies in Scotland at close of year 1879.

Description.	Ordinary.		Guaranteed and preferential.		Loans and debenture stock.		Total.	
	Amount.	Proportion to total capital.	Amount.	Proportion to total capital.	Amount.	Proportion to total capital.	Amount.	Proportion to total capital.
North British, including leased and worked lines.....	\$34,630,764	23	\$80,574,577	53	\$36,511,276	24	\$151,716,617	100
Caledonian, including leased and worked lines.....	75,258,505	41	72,633,520	39	36,110,904	20	184,002,929	100
Glasgow and Southwestern, including leased and worked lines.....	24,343,255	51	12,211,734	26	11,262,877	23	47,917,866	100
Great North of Scotland, including leased and worked lines.....	4,554,080	23	10,405,308	52	4,831,194	25	19,790,576	100
Highland, including leased and worked lines.....	10,662,368	50	5,322,637	25	5,400,100	25	21,385,105	100
Other companies.....	5,046,911	30	9,418,215	57	2,076,925	13	16,542,051	100
Total.....	154,496,883	85	190,665,985	43	96,202,276	22	441,365,144	100

No. 3.—Amount and average rate of dividend on each description of capital in the year 1879.

Description.	Ordinary.		Guaranteed and preferential.		Loans and debenture stock.		Total.	
	Amount.	Average rate.	Amount.	Average rate.	Amount.	Average rate.	Amount.	Average rate.
North British, including leased and worked lines.....	\$144,343	0.33	\$2,875,493	3.57	\$1,505,467	4.12	\$4,495,803	2.96
Caledonian, including leased and worked lines.....	1,080,928	2.23	3,166,539	4.36	1,432,119	3.97	6,279,586	3.41
Glasgow and Southwestern, including leased and worked lines.....	834,731	3.43	609,217	4.94	452,142	4.01	1,896,090	3.95
Great North of Scotland, including leased and worked lines.....	42,723	0.94	427,941	4.11	202,305	4.18	672,969	3.40
Highland, including leased and worked lines.....	301,188	2.37	280,207	4.88	228,443	4.13	789,838	3.09
Other companies.....		NIL.	425,819	4.52	98,456	4.50	519,275	3.14
Total.....	2,973,913	1.92	7,765,216	4.07	3,913,832	4.07	14,653,061	3.32

No. 4.—*Proportion of capital in relation to rates or absence of interest.*

Ordinary capital.*		Guaranteed capital.†	
Rates of dividend.	Amount at each rate.	Rates of dividend.	Amount at each rate.
Per cent.		Per cent.	
Nil†	†\$521,918	Nil†	†\$537,943
Nil	54,406,667	Nil	517,338
1	208,530	1	500,388
2	1,135,169	2	19,943,087
3	4,929,010	3	1,458,490
4	843,575	4	2,346,456
5	436,289	5	223,399
6	543,245	6	15,794,421
7	4,549,156	7	340,665
8	223,859	8	194,600
9	49,910,955	9	291,990
10	23,980,701	10	369,854
11	606,313	11	5,534,297
12	7,603,132	12	1,167,900
13	583,980		
14	729,975		
15	1,216,625		
16	924,392		
17	880,301		
18	760,902		
	154,496,883		49,239,933

Preferential capital.‡		Loans.¶		Debenture stock.¶	
Rates of dividend.	Amount at each rate.	Rates of dividend.	Amount at each rate.	Rates of dividend.	Amount at each rate.
Nil	\$4,686,498	3½	\$1,718,220	3	\$357,872
1	53,872	3¾	1,258,866	3½	487,541
1½	11,148,611	4	36,238,383	4	38,719,022
2	3,923,664	4½	531,826	4½	7,872,675
3	364,988	4¾	2,452,117	4¾	3,810,251
4	76,632,401	5	12,166	5	4,949,904
4½	347,030		1,293,433		
4¾	18,141,477				
5	19,584,864		43,505,011		52,697,265
5½	2,433,250				
6	3,109,397				
	141,423,052				

*Average rate of dividend on ordinary capital, 1.92 per cent.

†Capital of companies whose lines were in course of construction.

‡Average rate of dividend on guaranteed capital, 4.85 per cent.

§Average rate of dividend on preferential capital, 3.87 per cent. Average rate of dividend on guaranteed and preferential capital, 4.07 per cent.

¶Average rate of interest on loans, 4.03 per cent.

||Average rate of interest on debenture stock, 4.09 per cent. Average rate of interest on loans and debenture stock, 4.07 per cent.

NOTE TO TABLE NO. 4.—The average rate of dividend or interest upon the whole, calculated upon the above amounts and at the above rates, as they were given in the annual returns, was 3.32 per cent.

No. 5a.—Receipts from passenger trains in the year 1879.

Lines.	Receipts from passenger trains.						
	Receipts from passengers.					Excess luggage, parcels, carriages, dogs, and mails.	Total.
	First class.	Second class.	Third class and parliamentary.	Holders of season or periodical tickets.	Total from passengers.		
North British, including leased and worked lines	\$737,460	\$254,713	\$2,361,459	\$218,404	\$3,572,045	\$531,515	\$4,103,560
Caledonian, including leased and worked lines	718,836	338,992	2,255,199	203,624	3,571,651	716,514	4,288,165
Glasgow and Southwestern, including leased and worked lines	338,051	117,545	1,099,703	92,488	1,645,787	249,695	1,895,483
Great North of Scotland, including leased and worked lines	113,141	.....	429,824	45,502	588,467	89,339	677,806
Highland, including leased and worked lines	191,623	77,733	429,576	13,816	712,748	256,347	969,095
Other companies	25,944	9,971	89,675	8,039	133,629	15,919	149,548
Total 1879	2,123,064	853,954	6,665,436	581,873	10,224,327	1,860,329	12,083,656
Total 1878	2,336,684	1,024,316	6,981,111	587,644	10,929,755	1,904,680	12,834,435

No. 5b.—Receipts from goods trains, and proportion of receipts from passenger and goods trains, in the year 1879.

Lines.	Receipts from goods, &c., trains.				Total from passenger and goods trains.	Proportion of receipts from passenger and goods trains.	
	Minerals.	General merchandise.	Live stock.	Total goods, &c., trains.		Passenger.	Goods, &c.
North British, including leased and worked lines	\$3,009,745	\$3,398,180	\$236,317	*\$6,684,488	\$10,788,048	38	62
Caledonian, including leased and worked lines	3,874,609	3,829,819	308,380	8,012,779	12,300,964	35	65
Glasgow and Southwestern, including leased and worked lines	1,309,551	1,356,405	85,983	2,751,889	4,647,371	41	59
Great North of Scotland, including leased and worked lines	165,890	480,396	45,619	691,905	1,368,711	49	51
Highland, including leased and worked lines	133,274	477,618	108,303	719,195	1,698,290	57	43
Other companies	55,181	61,230	10,074	126,485	276,033	54	46
Total 1879	8,548,241	9,603,648	794,626	18,946,761	31,070,417	39	31
Total 1878	8,820,030	9,674,412	848,163	19,372,081	32,206,516	40	60

*Including \$40,246, receipts not classified.

No. 6.—*Total railway receipts and expenditures, and net receipts from railway working, and percentage proportion of expenses to receipts, and of net receipts to total share and loan capital in year 1879.*

Lines.	Total traffic receipts.	Total railway working expenditure.		Net receipts from railway working.	
		Amount.	Proportion per cent. to total traffic receipts.	Amount.	Proportion per cent. to total share and loan capital.
North British, including leased and worked lines	\$10,788,048	\$5,645,198	52.3	\$5,142,850	3.39
Caledonian, including leased and worked lines	12,300,964	6,456,093	52.5	5,844,871	3.17
Glasgow & Southwestern, including leased and worked lines	4,647,371	2,512,934	54.0	2,134,437	4.45
Great North of Scotland, including leased and worked lines	1,369,711	697,681	50.9	672,030	3.39
Highland, including leased and worked lines	1,688,290	926,757	54.9	761,533	3.36
Other companies	276,083	161,090	58.3	114,943	0.69
Total	31,070,417	16,398,754	52.8	14,670,603	3.32

No. 7.—*Numbers of passenger-journeys, number of season-ticket holders, and tonnage of goods and minerals conveyed, in the year 1879.*

Lines.	Passengers.				Holders of season or periodical tickets.	Minerals.	General merchandise.
	First class.	Second class.	Third class and parliamentary.	Total.			
North British, including leased and worked lines	1,690,544	795,477	12,542,261	15,028,282	13,119	Tons. 7,743,796	Tons. 2,475,616
Caledonian, including leased and worked lines	1,396,216	1,416,164	11,269,284	14,081,664	6,060	10,043,505	2,530,843
Glasgow and Southwestern, including leased and worked lines	723,096	525,084	5,444,219	6,692,401	1,747	3,548,005	776,545
Great North of Scotland, including leased and worked lines	220,383	.....	1,768,443	1,988,826	1,468	283,151	351,465
Highland, including leased and worked lines	159,202	79,872	1,120,345	1,359,419	1,548	135,111	246,770
Other companies, including leased and worked lines	546,440	354,906	2,625,756	3,527,104	4,197	408,175	332,239
Total, 1879	4,735,893	3,171,505	34,770,308	42,677,706	28,139	22,161,743	6,718,368
Total, 1878	4,815,296	3,578,233	34,766,885	43,160,416	27,503	21,237,596	6,685,442

No. 8.—*Receipts from passenger trains and from goods trains, per train-mile, in year 1879.*

Lines.	From passenger trains.	From goods, &c., trains.	From passenger, goods, &c., trains.
North British, including leased and worked lines	\$0.8982	\$1.8781	\$1.1453
Caledonian, including leased and worked lines	0.8910	1.3044	1.1228
Glasgow and Southwestern, including leased and worked lines	0.9632	1.2854	1.1311
Great North of Scotland, including leased and worked lines	1.1416	1.3564	1.2409
Highland	mixed	trains.	1.2416
Other companies	mixed	trains.	1.3563
	0.9224	1.3380	1.1448

No. 9.—*Expenditure by railway companies in Scotland per train-mile in the year 1879.*

Lines.	Maintenance of way.	Locomotive and rolling stock.	Traffic and general charges.	Rates, taxes, and government duty.	Miscellaneous.	Total.
North British, including leased and worked lines	\$0. 1319	\$0. 2073	\$0. 2057	\$0. 0313	\$0. 0231	\$0. 5993
Caledonian, including leased and worked lines	0. 1137	0. 2085	0. 1998	0. 0383	0. 0236	0. 5893
Glasgow and Southwestern, including leased and worked lines	0. 1529	0. 2144	0. 1893	0. 0409	0. 0143	0. 6116
Great North of Scotland, including leased and worked lines	0. 1435	0. 1945	0. 2020	0. 0584	0. 0336	0. 6320
Highland, including leased and worked lines	0. 1527	0. 2157	0. 2335	0. 0520	0. 0804	0. 6943
Other companies	0. 1965	0. 1871	0. 3240	0. 0339	0. 0675	0. 8090
Mean	0. 1298	0. 2086	0. 2028	0. 0377	0. 0253	0. 6043

No. 10.—*The total number and the number per mile of open railway, of locomotives, carriages, and other vehicles in the year 1879.*

Lines.	Locomotives.		Carriages used for the conveyance of passengers only.		Other vehicles attached to passenger trains only.		Wagons of all kinds used for the conveyance of live stock, minerals, or general merchandise.		Any other carriages or wagons used on the railway not included in the preceding columns.		Total of vehicles, excluding locomotives.	
	Number.	Number per mile.	Number.	Number per mile.	Number.	Number per mile.	Number.	Number per mile.	Number.	Number per mile.	Number.	Number per mile.
North British, including leased and worked lines.	611	.54	1,249	1.83	434	.46	26,085	27.70	152	.16	27,870	29.65
Caledonian, including leased and worked lines.	684	.80	1,136	1.41	431	.50	40,955	48.12	636	.75	43,220	50.78
Glasgow and Southwestern, including leased and worked lines.	280	.86	619	1.90	205	.68	11,022	33.91	304	.94	12,150	37.38
Great North of Scotland, including leased and worked lines.	62	.21	200	0.70	80	.28	2,029	7.10	28	.09	2,337	8.17
Highland, including leased and worked lines.	70	.17	203	0.51	28	.19	2,324	5.75	46	.11	2,651	6.59
Other companies	5	.09	13	0.21	9	.15	21	0.35	.....	.....	43	0.71
	1,612	.56	3,482	1.21	1,287	.43	82,386	28.77	1,166	.41	88,271	30.82

BRITISH, FRENCH, AND AMERICAN STEAM SHIPPING.

REPORT BY CONSUL SPRAGUE, OF GIBRALTAR.

I have to confirm my former observations with regard to the serious decline which the mercantile shipping interests of the United States continue to experience within this and other neighboring consular districts in the Mediterranean and Levant Seas.

Few are the American merchant sailing vessels that are now to be seen navigating in these waters, and as to merchant steamers under our flag, not one reaches these shores. On the other hand, the navigation by British mercantile steamers in the Mediterranean and elsewhere, in connection with the trade for the United States markets, increases.

No less than 297 steamers under the British flag have called into this port during the past year, for the purpose of coaling, bound direct to ports in the United States, most of them loaded with large and valuable cargoes from distant and neighboring foreign ports. The aggregate registered tonnage of these 297 steamers amounted to 316,032 tons.

France having for some time past obtained no marked improvement in her mercantile navigation interests, consequent to the increased number of British steamers accepting low rates of freight for all parts of the globe, which has obtained for British shipping a very firm hold on the carrying trade of the world, has lately brought forward a marine merchant bill, under the expectation that it may better her shipping interests in every way.

This bill grants a bounty, not only for the construction in France of ships, but also permits their earning a bounty for every 1,000 miles of sea traversed in their voyages. It seems to be a case of pure protection for her shipping interests, and the earnest manner with which the British officials in France have represented the matter to their government, as likely to prove very prejudicial to the interests of British shipping, suggests itself whether the legislation of some similar system in the United States might not be the means of promoting an early and direct improvement in the condition of our mercantile shipping interests, without creating any onerous effect upon the finances of the country.

As will be seen by the table of navigation accompanying this report, the total number of arrivals at Gibraltar during the past twelve months has been 4,082 steamers and 603 sailing vessels, of which 3,032 steamers and 253 sailing vessels were under the British flag, showing an increase of 435 steamers and a decrease of 300 sailing vessels on the preceding year.

Two lines of steamers have lately been established between the Mediterranean and New York, the "French General Transatlantic" and the "Italian Florio" companies.

They consist of very superior sea-going steamers; accept cargo at a reasonable rate of freight and offer good accommodation for passengers, as they register near 2,000 tons each.

The French steamers leave Marseilles for New York, touching at Barcelona, Cadiz, Teneriffe, and West India ports. The Italian steamers leave Palermo for New York, calling at this port to coal and provision, both on their outward and homeward passages, while the French only call in here on their homeward passage. Both lines of steamers invariably land some cargo at this port, which is shipped at New York, consisting generally of flour, wheat, alcohol, and tobacco.

I apprehend these steamers will eventually seriously interfere with the carrying trade, at present almost exclusively conducted by our sailing vessels between New York and this market, and be the means of establishing a fresh source of competition to the detriment of the mercantile shipping interests of the United States.

HORATIO J. SPRAGUE, *Consul.*

UNITED STATES CONSULATE,

Gibraltar, British Possessions, October 2, 1880.

Statement showing the navigation at the port of Gibraltar, for the year ending September, 30, 1880.

Flag.	From—	Entered.					
		Steamers.		Sailing vessels.		Total.	
		No.	Tons.	No.	Tons.	No.	Tons.
Austrian	Chiefly from ports in Europe	.....	.....	27	.....	27	.....
Belgian	do	34	.....	.....	.....	34	.....
British	do	3,082	.....	253	.....	3,285	.....
Danish	do	22	.....	7	.....	29	.....
Dutch	do	50	.....	21	.....	71	.....
French	do	258	.....	26	.....	284	.....
Greek	do	20	.....	3	.....	23	.....
German Confederation	do	47	.....	28	.....	75	.....
Italian	do	42	.....	75	.....	117	.....
Jerusalem	do	.....	.....	1	.....	1	.....
Norwegian	do	106	.....	43	.....	149	.....
Portuguese	do	.....	.....	31	.....	31	.....
Russian	do	13	.....	10	.....	23	.....
Swedish	do	32	.....	29	.....	61	.....
Spanish	do	423	.....	16	.....	*439	.....
Turkish	do	2	.....	.....	.....	2	.....
United States of America—							
	United States	18	.....	.....	.....	.....	.....
	Italy	5	.....	.....	.....	.....	.....
	Spain	4	.....	.....	.....	.....	.....
	Algeria	3	.....	.....	.....	.....	.....
	Peru	1	† 1,068	33	18,020.50	34	19,088.50
	Turkey	1	.....	.....	.....	.....	.....
	Egypt	1	.....	.....	.....	.....	.....
	France	1	.....	.....	.....	.....	.....
		4,082	.....	603	.....	4,685	.....

Flag.	From—	Cleared.					
		Steamers.		Sailing vessels.		Total.	
		No.	Tons.	No.	Tons.	No.	Tons.
Austria	Chiefly from ports in Europe	.....	.....	27	.....	27	.....
Belgian	do	34	.....	.....	.....	34	.....
British	do	3,028	.....	246	.....	3,274	.....
Danish	do	22	.....	7	.....	29	.....
Dutch	do	50	.....	21	.....	71	.....
French	do	258	.....	26	.....	284	.....
Greek	do	20	.....	3	.....	23	.....
German Confederation	do	47	.....	28	.....	75	.....
Italian	do	42	.....	73	.....	115	.....
Jerusalem	do	.....	.....	1	.....	1	.....
Norwegian	do	106	.....	43	.....	149	.....
Portuguese	do	.....	.....	31	.....	31	.....
Russian	do	13	.....	10	.....	23	.....
Swedish	do	32	.....	28	.....	60	.....
Spanish	do	419	.....	15	.....	*434	.....
Turkish	do	2	.....	.....	.....	2	.....
United States of America—							
	United States	18	.....	.....	.....	.....	.....
	Italy	5	.....	.....	.....	.....	.....
	Spain	4	.....	.....	.....	.....	.....
	Algeria	3	.....	.....	.....	.....	.....
	Peru	1	† 1,068	33	18,020.50	34	19,088.50
	Turkey	1	.....	.....	.....	.....	.....
	Egypt	1	.....	.....	.....	.....	.....
	France	1	.....	.....	.....	.....	.....
		4,078	.....	592	.....	4,665	.....

* And a quantity of lateen crafts.

† Purchased in Alexandria by Lieut. Commander H. H. Gorrings, U. S. Navy, to transport to New York an obelisk presented to the United States by the Khedive of Egypt.

IMPORTS AT GIBRALTAR FROM THE UNITED STATES.*RÉPORT BY CONSUL SPRAGUE.*

As already often mentioned, the Gibraltar market, with the exception of the usual retail trade to meet the actual local wants of the town and garrison, is one of circumstances, as regards any important traffic in the sale of merchandise, especially as to the article of tobacco imported direct from the United States. This article being a monopoly in Spanish territory, the moment the Spanish revenue officials relax their vigilance for their own private benefit, trade is brisk, while when proper strictness is shown, as required by duty, the reverse occurs.

TOBACCO.

For some time past the tobacco trade has been particularly quiet, and the importations during the past twelve months direct from the United States have only reached 1,252 hogsheads of Kentucky and Virginia leaf and 553 cases of tobacco cuttings, against 1,693 hogsheads and 2,535 cases during the preceding year.

The falling off in this particular branch of trade connected with the United States may perhaps be somewhat attributed to the fact of Lord Napier of Magdala, the present governor of Gibraltar, showing a great inclination to please the Spanish Government by discountenancing, to the utmost extent of his power, every act tending towards the encouragement of smuggling from this garrison through the Spanish lines and neighboring coast of Spain, by introducing local police and port regulations, which are undoubtedly of a restrictive and vexatious character, and which eventually will limit the general trade of this free port.

Lord Napier's policy is no doubt founded upon a friendly disposition towards Spain on account of Great Britain's retention of Gibraltar, which has generally been regarded as a thorn in the sides of the Spanish Dons; but such is the peculiar nature of the Spaniards on the sea-coast, I apprehend the appreciation of the British governor's policy is limited to a few, who are probably far away from the scene where contraband has been more or less carried on.

I am assured that Oran, a sea-port in Algeria, is now becoming the center for the illicit trade of tobacco into Spain by her eastern shores, indicating that a different course of policy is being pursued on the part of the French authorities to what those of Gibraltar are now disposed to adopt.

BREADSTUFFS.

The moderate prices at which wheat and flour are ruling in the United States render it more than probable that the wants of this market will in future be chiefly met by direct American importations, to the prejudice and interference of the regular supplies usually arriving from Marseilles and other breadstuff markets in the Mediterranean. I can already perceive a falling off in the importations from these quarters, while those direct from New York are increasing and promise to be more important in future, offering a further well-grounded reason for the quietude which seems to pervade the principal markets of Europe for

breadstuffs, consequent to the gradual increase in the shipments of American wheat to Europe, in view of the immense yield in the United States.

PETROLEUM.

No facilities have yet been granted for depositing any quantity of petroleum in this garrison, therefore no encouragement offers for speculation in this market. The yearly importations have reached 33,706 cases, against 48,893 cases during the preceding year.

ALCOHOL.

The importations of American alcohol during the past twelve months have been 92 puncheons and 2,020 barrels, showing a large excess on previous recent years, no doubt the result of its moderate cost in the Western States, which has permitted importers to command the market over foreign supplies. I must, however, observe that American alcohol is less appreciated than the German, which generally obtains a higher price here. Whether the merits of German alcohol be the result of better distilling, or from the substances distilled from, I cannot say, but certainly the trade gives it the preference, it being considered of a softer and more delicate flavor, and is preferred for reinforcing wines and other purposes, a matter which I presume is better known to our distillers than to any one else.

COAL.

The coal trade continues as active as ever, and it cannot be otherwise, in view of the constant daily arrival of steamers, which can always count upon obtaining the required supply of fuel at a moderate price, accompanied with quick dispatch.

HORATIO J. SPRAGUE, *Consul*.

UNITED STATES CONSULATE,

Gibraltar, British Possessions, October 2 1880.

ITALIAN INDUSTRIAL EXPOSITION OF 1881.

REPORT BY CONSUL CRAIN, OF MILAN.

The Italian Industrial Exposition, to be opened at Milan May 1, 1881, and to be continued until August 1, promises to be a very complete and instructive exhibition of the various products of the kingdom.

The appropriations made by the government at Rome and by the city of Milan, and the liberal subscriptions of individuals, were such at the outset of the enterprise as to insure its success, so far as it depended on pecuniary support.

But a more sure augury of success may be found in the cordial support which is being given by the chambers of commerce in all parts of the country, and the thorough manner in which the executive committee here are doing their work.

The exposition will be one exclusively of national products, but it will afford the representatives of American industries a favorable opportunity to observe in what branches they may successfully compete with Italians, and in what others they may profit by Italian excellence.

This investigation will be especially useful in the departments devoted to agricultural and mining machinery, and tools, cotton fabrics, leather,

and paper, for all of which there will be an increasing demand for the American make when our manufacturers have learned the kinds and qualities required.

The exposition will embrace the following:

All agricultural products and processes; all kinds of indigenous and acclimatized woods and extracts from same; industries relating to mining, quarrying, and extracting of all substances from the earth, with specimens of such substances, including all varieties of stone and metals, with machinery and processes of abstraction; methods and instruments for examining mines, crushing and manipulation of ores; mineral waters, analyses, extracts from same; industrial machines; use of metal and wood in building; machinery of all kinds connected with industries or locomotion; chemical products, apparatuses, and processes; food products, crude, prepared, and preserved; pottery, porcelain, and glassware, with processes; paper, paper-making, and articles made of paper; fabrics of silk, cotton, linen, hemp, jute, and other fibers, and processes, with raw materials of each; and products in the whole range of the useful and liberal arts.

The organization of the army, its clothing, subsistence, sanitary service, telegraphic system, tactics, small-arms, artillery, and system of national defenses will be illustrated, as well as the naval service in its details.

The public school system, including technical instruction, with books and appliances for teaching, will have a prominent place.

The exposition will be opened by the King of Italy. The mayor of Milan is the head of the executive committee and honorary president.

Those of our countrymen wishing to trade with Italy will find in this exposition an exceptional opportunity to learn the needs of this people and in what articles they can supply our wants.

DUNHAM J. CRAIN, *Consul*.

CONSULATE OF THE UNITED STATES,
Milan, Italy, June 10, 1880.

SULPHATE OF QUININE AND CINCHONA.*

REPORT BY CONSUL CRAIN, OF MILAN, ON THE MANUFACTURE OF SULPHATE OF QUININE IN ITALY, AND SUGGESTIONS AS TO THE CULTIVATION OF THE CINCHONA TREE IN THE UNITED STATES.

MANUFACTURE OF SULPHATE OF QUININE.

The manufacture of salts and sulphate of quinine is an important Italian industry. It has been carried on at Milan and Genoa since 1870.

Twenty-two thousand five hundred pounds are consumed yearly in Italy, of which one-half is made at Milan, 6,750 pounds at Genoa, and the balance imported from Germany.

Forty-five thousand pounds of quinine and salts of quinine are produced in Italy. The production of the world is estimated at from 230,000 to 260,000 pounds per year, as follows:

	Pounds.
Germany.....	56,250
Italy.....	45,000
France.....	40,500
England.....	27,000
America.....	63,000
India.....	12,250

* For further information upon this important product see pages 515 and 632, volume 6 (April), of "Consular Reports."

The two Italian factories produce 45,000 pounds of the sulphate of quinine, viz, 40,500 pounds at Milan, and 4,500 pounds at Genoa. The first of these employs 45 hands, the second 15.

The Milan factory ships largely to all parts, furnishing large supplies to Russia, France, and Austria. England receives two-thirds of her supply and Holland one-half of hers from the same source.

THE CINCHONA IN ITALY, INDIA, AND THE UNITED STATES.

Efforts will be made to acclimatize the cinchona in Italy, to increase the supply and lessen the cost of the product. Its successful culture in India and Ceylon encourages the belief that it will grow wherever the soil is dry, the rainfall large, and climate temperate. Many parts of the United States fulfill these conditions, and notably where its product is needed. The culture of the cinchona in our country would cheapen an indispensable medicine and open a new industry to capital and labor.

In this connection some facts reported by Mr. E. Van Eetvelde, the consul-general of Belgium in India, are instructive. He reports that the best varieties of cinchona have been successfully acclimatized in British India. The government there cultivate chiefly the *Cinchona succirubra*, which has a red bark and contains a large quantity of febrifuginous alkaloids, and the *Cinchona calisaya*, which has a yellow bark and is better suited to the manufacture of quinine. The culture of the first has succeeded. Uncertainty still exists as to the *Cinchona calisaya*, and the Bengal government are examining the plantations of Java, where it has been cultivated with entire success.

The cinchona plantations are in two distinct regions of India, i. e., north of the Neilgherry Hills, in the Madras presidency, and on the slopes of the Himalayas. Those of the government are as yet the most important, covering 1,300 acres on the Neilgherry Hills, and nearly 3,000 acres in Sikkim. There are several private plantations of later date already producing marketable bark.

The red bark (*Cinchona succirubra*) has many febrifugal alkaloids, but little quinine. It was important, therefore, to determine the therapeutic value of these alkaloids, and the cheapest means of extraction, in order to furnish a good febrifuge at a moderate price. The medical commission recommended the extraction of cinchonine, cinchonidine, and of quinine by simple means, and the government now sells a mixture of these three alkaloids under the name of "Cinchona febrifuge."

As the price does not exceed 65 cents United States gold per ounce this febrifuge is used in nearly all the hospitals of India, and sold in large quantities to the public. The chief surgeon of the Northeast province reports that the doctors are unanimous in declaring that the "Cinchona febrifuge" is a medicine of recognized efficiency in the treatment of ordinary intermittent fevers, and that it is an excellent prophylactic for those who live or travel in marshy countries.

Most doctors are, however, of the opinion that it is inferior to quinine as a therapeutic agent, that its effect is slower, and that it is insufficient to cure severe remittent fevers. That it is a medicine of value is shown by the increase in its use, which, as the following figures show, is remarkable:

	Pounds.
1874-'75	48
1875-'76	1,940
1876-'77	3,750
1877-'78	5,102
1878-'79	7,007

The hospitals took more than 5,500 pounds in 1878-'79, and as the use of quinine diminished in the same time about as much, it is proof, considering the cost of the last-named alkaloid, that the Indian Government saved about \$125,000.

At the present time the government chemist of India is trying to produce a better febrifuge by mixing three sulphates, viz, *cinchonine*, *cinchonidine*, and *quinine*, of which the cost would be a little higher.

Financially the plantations of Sikkim gave last year a net profit of \$19,252, although not fully developed, or 4½ per cent. on the sum invested.

By the prevention of disease the hospital expenses of the government were largely lessened.

The value of these facts in their relation to the United States is apparent.

DUNHAM J. CRAIN, *Consul*.

UNITED STATES CONSULATE,

Milan, Italy, June 15, 1890.

OUR COMMERCIAL RELATIONS WITH THE MEDITERRANEAN, AND HOW TO ENLARGE THE SAME.

REPORT BY CONSUL DUNCAN, OF NAPLES.

Referring to the late important communication of General Noyes, United States Minister Plenipotentiary in Paris, to the Department of State, on the subject of commercial relations between the United States and the Mediterranean, and various dispatches written by me last summer on the prospects and possibility of more extensive commercial relations, especially with Italy, I desire before leaving Naples to express some ideas that may be of interest.

AMERICAN SHIPPING IN THE MEDITERRANEAN.

It is only too true, as General Noyes states, that our flag is rarely seen floating over a commercial vessel even in the most important ports of the Mediterranean.

During the entire year 1879 only four American vessels came to Naples, bringing, as usual, tobacco and petroleum; and this was a fair specimen of previous years, with one or two exceptions, as 1877, for instance, when we actually had seven arrivals in one quarter. There have already been five arrivals the present year, but unfortunately there is no reason to suppose this other than accidental. The story of all the ports would probably be very much the same, though of course in such ports as Marseilles and Genoa American vessels are more frequently seen.

FOREIGN SHIPS ENGAGED IN AMERICAN TRADE.

But fortunately the absence of American vessels is not to be taken as indicating the amount of American trade. Such trade exists not near to the extent it should, and as I am convinced it might be made to, but at any rate to a much greater extent than might be inferred from the absence of American vessels. This is shown by the fact that foreign

vessels, both steamers and sailing vessels, English, Italian, Norwegian, German, Dutch, &c., are continually employed between the principal ports of the Mediterranean and the United States. Sailing vessels built and owned at Castellamare and Sorrente are continually employed between Italian ports and our principal ports. One of the leading English lines of steamers, the Anchor line, has been running successfully between the Mediterranean and New York for years, and of this line we have a steamer leaving Naples every week or ten or fourteen days for New York. Last year a special line of steamers was put on between New York and the fruit-shipping ports of South Italy by Phelps, of New York, though under the English flag.

As an indication that the business is increasing, Florio, the well-known Italian ship-owner, has put on a regular line between the principal ports of Italy and New York, and is having several first-class 4,000-ton steamers built on the Clyde for this line.

The first one, Vincenzo Florio, is already complete, and is advertised to start on its first trip early in June. These steamers are said to be fitted up with great elegance and comfort for the purpose of first-class passenger traffic.

All these foreign vessels engaged in the carrying trade between the Mediterranean and the United States show that there is no want of business. But the trouble is our vessels are not able to compete with them for it, for the very simple reason that it costs an American ship-owner more to build or buy and run a vessel than it does a foreigner. For this reason it was that Mr. Phelps, of New York, had to run his fruit-steamers last year under the English flag instead of under the American.

Until this disadvantage can be overcome in some way, it will be vain to hope for a return of our commercial prosperity, and again to see our flag floating, as formerly, in every commercial port. It is certainly a question worthy of careful consideration and of wise legislation. The most sure and simple way to restore this prosperity would no doubt be to allow our merchants to buy ships where they can get them on the best terms, like the Italians, Germans, and other foreigners are allowed to do.

AMERICAN VS. FOREIGN-BUILT SHIPS.

The effort to protect our few ship-builders, by not permitting our merchants to buy ships abroad, has simply had the effect of preventing a return of our commercial prosperity, without benefiting our ship-builders, for our few vessels built by them at a greater cost, cannot compete in the carrying trade with vessels that cost less. While foreign steamers and sailing vessels are continually finding cargoes in Naples and other Italian ports for New York, our vessels are very frequently returning in ballast, after discharging their cargoes of petroleum or tobacco, because they cannot afford to accept the rates offered for carrying fruits, marble, sulphur, rags, &c. In my humble opinion, the only possible way to remedy this evil is to permit the purchase of foreign-built vessels, and to admit free of duty all material that enters into the construction or running of ships, steam or sail. I am well aware that this is quite contrary to all the ideas of our protectionists. But in this case I think it is manifest that the idea of protecting our ship-builders results in preventing the improvement of our commerce without benefiting them. The idea I have seen suggested of remedying the evil by levying a tonnage duty on foreign vessels entering our ports would be such a violation of the reciprocity clause in our treaties of commerce that it

would most certainly be resented by levying a similar duty on our vessels, so nothing would be gained.

TRADE BETWEEN NAPLES AND THE UNITED STATES.

But my object in this is not to enter into a discussion of free trade *versus* protection, but rather to indicate what branches of business between the United States and the Mediterranean may, in my opinion, be developed and increased, and what new ones begun by more direct, frequent, and quick communication, such as Florio contemplates, and such as would result from having a direct American line. I may here repeat what I have previously written, that the difficulty has generally been to procure return cargo from the United States, rather than *vice versa*, so much so that the Anchor Line steamers, while going direct from the Mediterranean to New York, have always returned via Glasgow, thus losing all the advantages of direct communication from New York to the Mediterranean. I may also remark that the prospects of doing business in two articles, *anthracite coal* and *manufactures of cotton*, on which I reported favorably last summer, do not now seem so favorable as then. Since the improved business prospects in the United States, and the consequent increased price of coal, the Reading Railroad Company seems to have lost its interest in finding an outlet in the Mediterranean, and has not established at Naples, or elsewhere, so far as I am aware, deposits for its coal. From this, one naturally infers that the company has not felt that a profitable business could be done. Nor have the first attempts at introducing our manufactures of cotton been more successful. The houses which first gave orders have not renewed them, doubtless finding that they could not compete successfully with English, French, and German goods.

American grain.—But in place of these a most important new branch of trade has been opened, that of American grain. From January 1, 1879, to June 31, 1880, forty-five vessels, of which eleven were large steamers, brought cargoes of grain from one of our ports to Naples alone, and of all these not a single one carried the American flag.

The entire amount brought during this period was about 1,700,000 bushels. The immediate cause of this great importation of American grain into Naples and other Italian ports where it had theretofore been comparatively unknown was the bad harvest in Italy, as well as elsewhere in Europe.

In the Neapolitan provinces the wheat crop for 1879 was about one-third under the average in quantity, besides the weight of what was produced, being about 5 per cent. under the average. Oats and barley gave still shorter crops than wheat, and Indian corn, and beans, and other vegetables were a still worse failure.

A most intelligent and reliable grain dealer states the case as follows to me:

With such short crops there has been no surplus of wheat for export, and the high prices for wheat, which reached the highest point in October, combined with the scarcity and dearth of beans and other vegetables, cast a larger portion of the local consumption on maize.

In former years there was a great prejudice among millers against American maize, and the imports from the United States had served almost exclusively for distilling purposes.

The high prices asked for Neapolitan maize led to a fairer trial being given to American, and the result has been to show that whereas 100

kilograms of Neapolitan maize give 130 to 150 kilograms of corn bread, the same quantity of American gives about 170 to 190 kilograms.

American maize having thus been required for eating as well as for distilling purposes, this year's imports have been on an unusually large scale, and as buyers now take it in preference to Neapolitan at the same price (whereas in former years they were in the habit of paying from 5 to 6 lire per 100 kilograms more for the latter), there appears to be every probability that even with an average crop in these provinces the importation of maize from the United States would not be discontinued.

From this it would seem that American grain may compete successfully here with the Naples and Black Sea grain, and thus become a permanent article of trade between the United States and Italy. No doubt with more direct and frequent communication many other articles of American production would find a market in Italy. Already our canned provisions, such as "canned beef," salmon, lobster, oysters, &c., may be found in all the best provision stores. Our improved agricultural machinery, too, is gradually finding a market in Italy, which I think might be developed to a considerable extent.

Passage traffic.—The possibility of passenger traffic is also worthy of consideration, as it seems to have been by Florio in the construction of his new steamers. The Anchor Line steamers, though generally not very well prepared for first-class passengers, and requiring entirely too much time, touching various ports for cargo, nevertheless often carry to the United States a good number of passengers, families, invalids, &c., who dread the long land trip to Liverpool from Italy. Proper accommodation and a reasonable time employed on the way would no doubt induce many who have no special desire to pass through England and France to prefer a more direct and easy route.

Freight.—As before stated the difficulty has not been to find freight for the United States from the Mediterranean ports; with improved communications, and especially if we could have liberal and carefully considered *commercial treaties* with Italy, France, Austria, and other countries bordering on the Mediterranean, the branches of trade already existing would no doubt be greatly increased.

B. O. DUNCAN, *Consul*.

UNITED STATES CONSULATE,
Naples, Italy, May 15, 1880.

ITALIAN EMIGRATION.

REPORT BY CONSUL DUNCAN, OF NAPLES, ON ITALIAN EMIGRATION, AND ON THE CHARACTER AND HABITS OF THE ITALIAN PEASANTS.

CHARACTER OF LABORERS AND CAUSES OF THEIR EMIGRATION.

In connection with the subject of steam communication between Italy and the United States there is one source of business and profit for steamers properly prepared for it, I am confident might be begun and developed to an indefinite extent, viz, emigration. I am well aware that the organ-grinders and other roving musicians and vagabonds have not impressed Americans over-favorably with the lower orders of Italians. But these are not fair specimens of the industrious, patient, and saving Italian peasantry and laboring classes who are most given to emigrating. Probably next to the Germans and Irish no people in Europe

are more inclined to emigrate than the Italians, and especially the Italian peasantry. The causes of this are doubtless various.

But the one principal cause is no doubt to be found in the system of taxation in Italy, which weighs especially hard on agricultural interests, as well as on the laboring classes in general. Carefully prepared statistics, submitted by Senator Pepoli to the Italian Senate last year during the discussion of the *grist* or *mill tax*, shows that 19½ per cent. of the income of the government, or 230,000,000 lire, is derived from the prime necessities of life (breadstuffs, meat, and salt).

If we add to this the 70,000,000 lire derived from the *lottery*, which is *practically* almost as direct a tax on the poor as is that on bread or salt, we see that 300,000,000 lire, or almost one-fourth of the income of the Italian Government, is levied in such a way as to be especially oppressive to the poor.

Senator Pepoli shows that while a family of Italian laborers pays on an average 80 lire tax annually, in France it would pay only 11.50 francs. This, too, while in France the laborer gains on an average 1,200 francs annually, and in Italy only 669. Besides all this, the government tax on landed property (*fondi rustici*) amounts to 126,000,000 lire, which of course is a heavy burden on agriculture, and is felt especially by the laborer, as all such taxes are.

Speaking of this system of taxation, Cavour said it "is radically false, radically unjust, the most oppressive of all taxes, established to the damage of the most numerous class and for the benefit of the richest class." No wonder, then, that agriculture is not prosperous in Italy, and that the peasantry are inclined to flee from the oppressive taxation, as they do from military service in Germany. This emigration is directed mainly to South America, Buenos Ayres, Montevideo, Brazil, &c. All the steamers leaving Naples, Genoa, Marseilles, and Bordeaux for those regions go crowded with Italian emigrants.

ITALIAN PEASANTS FOR THE SOUTHERN STATES.

A very considerable portion of this could be turned into our Southern States without difficulty, if facilities for cheap and direct transportation existed.

That the Italian peasants would be a good class of emigrants for our Southern States I am quite convinced. They are industrious, economical, and accustomed to very careful cultivation of the soil, which we of the South very specially need. They would find there a climate very similar to their own in Italy. Many of the productions, too, would be the same, such as wheat, Indian corn, tobacco, cotton, and, in the extreme South, oranges, lemons, &c. Many other articles, too, produced in Italy, could be introduced by them with great profit to the country. I see no reason why many portions of the South should not grow the olive, the grape in abundance for wine making, the chestnut, so important an article of food all over Italy, &c.

Should an American company contemplate establishing a line of steamers to the Mediterranean, I think it would do well to make arrangements for carrying emigrants from Italy, Switzerland, and Austria direct to Charleston or Norfolk. It would be more convenient for Swiss to embark at Genoa or Marseilles than at any of the Atlantic or North Sea ports, and the Austrians would prefer Trieste, which of course would be one of the ports touched by any such line.

I am induced to write the foregoing rather hastily, on the supposition that General Noyes's dispatch will likely give rise to some effort to es-

establish an American line of steamers to the Mediterranean, and should this be the case I should like to contribute what I can, in the way of information, to its success.

B. O. DUNCAN, *Consul.*

UNITED STATES CONSULATE,
Naples, Italy, May 15, 1880

RAILWAY UP MOUNT VESUVIUS.

REPORT BY CONSUL DUNCAN, OF NAPLES.

Having yesterday paid a visit to the new railroad to the summit of Vesuvius, now about complete, and to be opened to the public in a few days, it may not be without interest for me to give some account of it, both on account of the novelty of the enterprise and of its practical utility to the thousands of Americans who annually visit "Bella Napoli."

The mode of ascending the famous volcano has been hitherto very difficult and expensive, and accompanied with many annoyances, on account of the swindling propensities of the guides, whom the local authorities never took sufficient care to keep in order. The stranger could take a carriage from his hotel to the Observatory, about 2,000 feet above the sea-level, or half way up the mountain. There the difficulties of the ascent really began, and the amount of expense and annoyance depended mainly on the traveler's skill in managing the dishonest guides and hangers-on. He had first to traverse the lava beds for nearly two miles, to the foot of the cone proper, by a very rough winding path. This could be done on foot or on horseback, but the latter not without some danger. Arrived at the foot of the cone he had to choose between being carried up in a chair by four men, begging for more pay every time they stopped to rest, or he could take one man to pull him and another to push, or he could select the probably more difficult but more independent way of going up alone. The cone is at angle of 45 to 55 degrees, and covered with very light cinders or ashes which give way under the feet, so the difficulty of the ascent may be imagined.

By the new railroad it is proposed to make the ascent very easy indeed, to cost not more than one-fourth to one-third the average present cost, and, what is probably most important, to free the stranger from the annoyances and swindling of the guides. An excellent carriage road has been continued over the lava from the Observatory to the base of the cone, on the west side of the mountain towards Torre del Greco. Regular conveyances belonging to the company will convey strangers from Naples to this point, where a station, a beautiful Pompeian restaurant, &c., have been constructed. At this point, 882 meters above the sea, and about 300 above the Observatory, the railroad begins, and runs straight up the mountain to within 200 yards of the crater.

The system adopted is novel to me, quite different from the road up Mount Washington or up the Righi in Switzerland, and is claimed to be the invention of Signor Olivieri, an engineer of Lombardy, who has had charge of the construction. Others speak of it as an American invention. I will describe it as well as I can without drawings.

The first difficulty was to make a road-bed over such an uncertain and yielding surface sufficiently solid and steady for the track. This was accomplished by excavating considerably into the side of the mountain and constructing a bed of large oak beams, lava, and mortar, all worked

and interwoven together in such a manner as to form one solid mass from the lower to the upper end of the road. To this bed are attached and firmly grooved and fastened together two lines of immense oak beams, probably 8 or 9 feet apart; and to the top of these beams are fastened the rails, which are very large, strong, T-rails, larger and especially broader at the top than ordinary rails. This is because each of these tracks has to bear the entire weight of the car, each constituting an independent *single* track road. The car is supported on two wheels, one in front of the other, like a bicycle; and to prevent it falling over to one side or the other there are two lateral wheels on each side attached to a frame work from the outer edges of the car, and rolling horizontally against the bottom of the large oak beams to which the rails are attached.

There are two of these cars, one for each single track, and while one is going up the other comes down. These two cars are attached together by two wire cables (one on each side of its track), each composed of forty-nine steel wires plaited together, forming a cable probably an inch and a quarter in diameter.

These cables pass over a large horizontal wheel firmly fixed in the mountain at the top of the road, and are prevented from the wear and friction of dragging on the ground by pulleys placed at suitable distances all the way up and down. The motive power is furnished by a stationary engine in the station at the lower end of the road, assisted to some extent by the counterpoise of the descending car. The weak part of the arrangement is undoubtedly in the danger of these cables suddenly breaking. But this is provided against by apparently well-arranged locks or brakes, one at each end of each car, which by claspings the large oak beam under the rail are capable, it is said, of arresting the car in an instant at any point. The road varies in steepness in different places from about forty to as much as sixty degrees, so that the seats in the cars are placed at an angle of forty-five degrees to keep them tolerably horizontal. Each car is divided into two compartments, with two seats in each for three persons, so that only twelve persons can go up or down at the same time. Only eight to ten minutes will be required for the ascent or descent. The entire cost of the work, as the director informed me, will be about 500,000 lire (\$100,000), and he estimates that one good season will entirely pay the cost of construction, which is, I presume, an exaggeration, though no doubt the road will add greatly to the number of visitors. The work was begun about the middle of last October, so it has taken but little over six months to build it. An important question is to how long the terrible volcano will allow this road to stand.

B. O. DUNCAN, *Consul*.

UNITED STATES CONSULATE,
Naples, Italy, April 27, 1880.

INTERNATIONAL HOSPITAL AT NAPLES.

REPORT BY CONSUL DUNCAN.

Before leaving Naples it may not be amiss for me to make a brief statement of our International Hospital here, an institution in which I have taken a special interest as one of the founders and active promoters. It is an institution partly benevolent, established by the united foreign residents here for the use of their respective countrymen, especially seamen and other poor or rather indigent persons who may chance to fall

ill here. Such an institution here is, of course, not so important for Americans as for several other nationalities, as Swiss, Germans, English, and French, as we have very few seamen and no resident colony. But different cases of treatment, with some deaths, of our sailors in Italian hospitals, had manifested to me, as it had to the consuls and other prominent representatives of the foreign colonies residing here, the advantage, not to say necessity, of having a hospital where the patient could understand the language and make himself understood.

All are received into the hospital on an equal footing, without regard to nationality or religion. We have even had Arabs and Chinese. While, as I said, its prime object was for seamen and indigent persons, there are also first-class private rooms where travelers of means, who may chance to fall ill in Naples, may receive better and more suitable attention than they could in the hotels. Only first-class patients pay enough to cover actual expenses, the second and third classes being intended to be, in part at least, benevolent, and the entirely destitute are received without any payment at all.

This being the case, the institution must depend to a considerable extent on voluntary contributions of residents and travelers. The only government assistance received is from England, she contributing annually 1,710 lire out of what is known as the "burial-ground fund," being a surplus of fees collected at the "British cemetery" here.

Foreign vessels very generally contribute 5 to 10 lire each, the special inducement being that the seamen belonging to those vessels can be treated for 1.80 lire per day instead of 2.50 lire.

The contributions have thus far been sufficiently liberal, so there is a considerable surplus, so much so that the committee is now seriously considering the question of buying or building a suitable structure for a permanent institution.

B. O. DUNCAN, *Consul*.

UNITED STATES CONSULATE,
Naples, Italy, April 29, 1880.

AMERICAN COTTON-SEED OIL IN ITALY.

REPORT BY CONSUL DUNCAN, OF NAPLES, ON THE IMPORTATION INTO ITALY OF AMERICAN COTTON-SEED OIL FOR THE ADULTERATION OF OLIVE OIL.

The large recent importation of cotton-seed oil has been a great source of alarm here on account of its competition with olive oil, which is one of the leading articles of exportation from Italy, and one of which Italy was especially proud, as being to a considerable extent a monopoly. Now the cotton-seed oil threatens not only to make dangerous competition, as substituting the olive oil for various uses, but also in bringing the olive oil into disrepute as an article of food on account of its adulteration with the former. The cotton-seed oil has already found its way into the remotest mountain villages, whose sole production is olive oil, where it is mixed with the latter and sold as pure; and so great is the resemblance that even the most expert cannot detect the mixture.

The government is endeavoring to impose a heavy tax on cotton-seed oil as a protection to the production of olive oil. But even then the protection would be inadequate as the cotton-seed oil has already found its way into other countries to which the olive oil was exported, especially into Russia, one of the chief outlets for the Italian olive oil. As the

cotton-seed oil can be brought to Italy and sold for less than half the value of olive oil the temptation to use it for the purpose of adulteration is manifest.

B. O. DUNCAN, *Consul*.

UNITED STATES CONSULATE,
Naples, Italy, October, 1880.

TRADE BETWEEN NAPLES AND THE UNITED STATES.

REPORT BY CONSUL DUNCAN.

IMPORTS FROM THE UNITED STATES.

The past year has been an especially unfavorable one for Naples, as well as the rest of Italy. The season was bad, crops were very short, especially in grain and other necessities of life, business has been bad generally, and as a consequence labor, difficult to obtain, was poorly remunerated, and suffering among the poor very great. Food, especially breadstuffs, has been unusually high, and would have been much more so had it not been for the large grain importations from the United States. The material result of all this was an increase of importations over exportations, thus draining the country of money which it was in no condition to spare.

The main articles imported from the United States into Naples continue, as heretofore, to consist in petroleum, tobacco, and cotton, with the addition of grain and cotton-seed oil.

As to how far the importation of grain can continue, when Italy has good crops, remains to be seen. Many think that it will continue, especially that of Indian corn, for reasons given in my dispatch No. 265.*

As before stated, it is not easy to obtain reliable statistics at this season; but according to the best information I can get the amount of American grain imported into Naples during the past twelve months is considerably in excess of 2,000,000 bushels. The amount of tobacco imported during same period was in excess of 5,000 hogsheads, weighing over 8,000,000 pounds. The amount of petroleum for same period was over 28,364 barrels and 78,200 cases.

There was also during same period considerable quantities of cotton-seed oil, several entire cargoes lard, &c., exact statistics of which I cannot obtain. Large quantities of American meats, canned meats, fish, oysters, lobsters, &c., are always to be found in the Naples market. But these come as yet almost entirely through large English houses, such as Crosse & Blackwell and Morton, of London, so they are not known here at the custom-house as American production at all. This being the case, it is impossible to get statistics as to amount.

The late improvement in direct connection with New York through the Florio steamers has already made considerable change in causing direct importations from the United States, and I have little doubt that in a short time many new articles of American production will find their way into Southern Italy to the mutual benefit of both countries. As a favorable indication of this, one of the last Florio steamers arriving here from New York brought 52 cases of agricultural machinery and implements to a single house dealing in such articles in Naples.

*See pp. 126, 127, of the October number of Consular Reports.

EXPORTS TO THE UNITED STATES.

The exports from this consulate to the United States do not show so favorably since the establishment of the commercial agency at Castellamare, the Sorrento fruit business going now to that office. Besides, the glove business, formerly the most important article of export from Naples to the United States, has been very largely diminished, owing mainly, I think, to trouble with the custom-houses in the United States. The declared value of shipments to the United States during the past year shows an increase over the previous year.

LACK OF AMERICAN SHIPPING.

The very small proportion of the commercial business between Italy and the United States done in American vessels, and my ideas of the best remedy therefor, I indicated in my dispatch No. 265,* and need not now repeat; but the fact is manifest that at present American vessels cannot compete successfully in the carrying trade with other nations. Something is absolutely necessary in the way of legislation before this national humiliation can be removed. Those interested in the improvement of our commerce, and desirous of seeing the American flag duly represented in commercial ports, must hope to see necessary legislation at an early day.

B. O. DUNCAN, *Consul*.

UNITED STATES CONSULATE,
Naples, Italy, October 4, 1880.

PAPER MANUFACTURE OF ITALY.

REPORT BY CONSUL CRAIN, OF MILAN.

Extent and mode of manufacture of paper in the several provinces of Italy.

Provinces.	Number of mills.	Horse-power.		Number of workmen.			Number of machines.		Number of vats—	
		By steam.	By water.	Adults.			Frame.	Drums.	In use.	Not in use.
				Males.	Females.	Children.				
Piedmont.....	49	53	2,798	1,383	1,570	411	32	8	86	31
Liguria.....	96	25	683	800	397	86	5	14	93	3
Lombardy.....	98	90	2,950	1,333	1,619	886	18	18	136	25
Venice.....	50		2,502	803	877	232	4	1	136	37
Emilia.....	83	20	450	290	217	69	2	3	68	20
Umbria.....	11		301	116	31	28		1	17	
Marches.....	15	20	446	571	221	114	3	4	29	11
Tuscany.....	78	10	781	857	665	103	3	3	156	
Rome.....	18		510	347	157	103	3	14	18	3
Abruzzi and Molise.....	3			18					4	
Campania.....	58	30	2,290	1,415	1,390	709	25	7	65	35
Sicily.....	5		4	10	10	15			5	10
Total for the Kingdom..	521	258	13,722	7,412	7,144	2,756	95	73	813	175

* See October number of Consular Reports, pp. 124-127.

Each frame machine requires about 100 hands, each drum 15, and each vat 8. The 95 machines of the first kind employ 9,713 hands, the 73 drums 1,095 hands, and 6,504 hands are required at the vats.

The importation of paper and paper stock into Italy during eleven years has been as follows:

Years.	Rags of all kinds.	White, colored, and prepared paper.	Blotting and coarse papers.	Other similar products.
	<i>Quintals.</i>	<i>Quintals.</i>	<i>Quintals.</i>	<i>Quintals.</i>
1869.....	14,680	12,302	1,991	4,911
1870.....	14,750	10,559	3,104	4,663
1871.....	12,670	11,690	3,046	5,315
1872.....	15,760	13,534	3,237	6,690
1873.....	16,780	12,910	3,587	6,844
1874.....	23,680	11,724	4,840	6,632
1875.....	18,400	12,775	6,113	5,811
1876.....	25,230	11,569	6,424	5,975
1877.....	26,810	10,805	5,600	6,037
1878.....	18,697	9,795	5,650	5,319
1879.....	21,119	10,478	5,883	6,287

The exports during eleven years from the kingdom were as follows:

Years.	Rags of all kinds.	White, colored, and prepared paper.	Blotting and coarse papers.	Other similar products.
	<i>Quintals.</i>	<i>Quintals.</i>	<i>Quintals.</i>	<i>Quintals.</i>
1869.....	111,441	19,279	26,506	1,903
1870.....	107,850	14,043	27,207	2,615
1871.....	157,270	16,531	29,179	2,288
1872.....	137,200	15,443	33,067	2,610
1873.....	128,440	20,343	41,816	3,826
1874.....	115,910	14,156	37,139	3,731
1875.....	86,370	16,310	34,792	3,816
1876.....	73,900	11,241	34,611	3,946
1877.....	101,050	23,518	40,097	3,713
1878.....	56,641	19,611	30,644	5,177
1879.....	63,300	24,192	44,562	5,500

AMERICAN WRITING AND WALL PAPERS IN ITALY.

The writing-papers made in Italy are inferior to those of France and England, for which reason the latter are imported.

The demand for these better grades of writing-paper could doubtless be in part supplied by American manufacturers.

Paper-hangings are used by all classes of Italians, and while made here to a limited extent, the chief supply is from England and France. American paper-hangings are criticised as not being original in design, but copies or imitations of European make. They are, however, well executed, and need only originality of design to secure a ready sale here.

Italian import and export duties on paper and paper stock, per quintal.

Description.	Import duty.	Export duty.
	<i>France.</i>	<i>France.</i>
Bags of all kinds.....per quintal..	Free....	8.80
Pulp of wood, straw, &c.....do....	Free....	Free.
Paper, white, tinted, &c.....do....	10.....	Free.
Paper, colored, gilded, pictured, and prepared.....do....	25.....	Free.
Do.....do....	5.....	Free.
Blotting and wrapping papers.....do....	5.....	Free.

The trade in papeteries has assumed large dimensions in Italy, and if those made in our country are as cheap and tasteful as the French they will find a good market in Italian cities.

DUNHAM J. CRAIN, *Consul.*

UNITED STATES CONSULATE,
Milan, Italy, July 15, 1880.

THE SILK-WORM IN THE UNITED STATES.

REPORT BY CONSUL HARRIS, OF VENICE, ON THE SILK-WORM INDUSTRY OF ITALY, AND ITS INTRODUCTION INTO THE UNITED STATES.

A suggestion or two may be made as to the extension in the United States of the culture of the silk-worm, which is so widely extended through Northern Italy. In our Middle or Southern States wherever the mulberry (*morus multicaulis*) could be grown under favorable conditions silk culture would be found to be profitable. It is especially fitted for adoption as an occupation to supplement income for families of small means. Here it is carried on largely by women and even children, and requires very little outlay.

In the silk culture of Northern Italy the Japanese seed still takes precedence, although every effort has been made by scientists to make the native seed equally productive, and to secure it from incidental maladies. As yet, the yield of silk from native worms is inferior in quantity and quality.

In the large establishments great care is taken to keep the temperature at about 60° Fahr., and as spring approaches increasing it daily 1° until 75° or 76° is reached. In the peasants' households, where fire is a luxury, the generating heat is often supplied by placing the card of seed between the beds occupied, under woollen clothing, or even carried about the person. The greatest care is required in feeding and keeping the worms clean from the moment they are developed.

Some producers feed six times daily, avoiding much light and regulating ventilation most strictly. Thirty days' feeding matures the worms, and ready for spinning they are carefully transferred to upright or diagonally placed branches in preference to the horizontal position, and the cocoon is completed in from two to three days. The native seed is washed in almost cold water, and the superstitious peasants give it a bath of wine to augment its strength. The crop is believed to be less valuable this year (1880) than last, and the average cocoon has been sold for 3.50 and 3.70 francs per kilogram.

It is perhaps a waste of words to suggest the extension of American trade to a region in which the masses of the people are so poor as in Venetia. Some idea of the condition of things in this respect may be

gathered from recent statistics relating to the capital city of the district. These show that out of a population of 140,000 in Venice, no fewer than 36,000 are paupers, while many more are partially supported by the various charitable institutions and by private beneficence. An increase of 10,000 in the number of inhabitants during the last thirteen years—that is, since Venice became part of United Italy, and a noticeable extension of the city's commerce during the same period—show that the steady decline of the past hundred years has been at length checked, but it will require some generations of growth and a greatly enhanced commercial prosperity to effect any marked diminution in the number of the unemployed, and consequently of the pauper class; nevertheless, in spite of this serious drawback, some American products might, with patient and persevering efforts, find a market, viz, the finer kind of hardware, preserved meats, lards, tallow, stearin, wrought iron, shirting, soda, potash, and cotton fabrics. Further, the introduction of the anthracite coal, with the importation at the same time of stoves for its use, would be a great boon to Venice. The fuel used at present is wood, which must be brought from a distance, and which is so expensive as to constitute one of the heaviest items in the annual disbursements of a household.

JOHN HARRIS, *Consul*.

UNITED STATES CONSULATE,
Venice, Italy, October, 1880.

PRODUCTS AND COMMERCE OF MONTENEGRO.

REPORT BY MINISTER KASSON, OF VIENNA.

During the brief sojourn which you were pleased to allow me outside of Vienna, in the month of March last, I found myself in that part of Austrian territory bordering on Montenegro.

The limited knowledge of that mountainous country, which is accessible in books, as well as its remarkable history and its recent admission into the family of nations, induced me to make the difficult but not long journey into the interior, where its capital is situated, in order to acquaint myself with its features, its character, and its resources.

A young American, voluntarily attached to this legation, and who had rendered me aid in my official work, accompanied me.

The arrival of a stranger in that mountain-defended country is an unusual event. So after my return to Vienna there appeared in the columns of the city journals a communication respecting my visit there, of which the following is a translation:

CETTINJE, *April 6.*

During these days our little city has harbored an interesting guest. The American minister at the court of Vienna, accompanied by one of his secretaries, has passed two days here, and was received by the Prince with great distinction, and very sympathetically by the people. The diplomat from beyond the world-sea (*Weltmeeres*) caused himself to be accurately informed in respect to our conditions, especially touching the present differences with the Porte, and gave special attention to Antivari, our harbor on the Adriatic.

News of my coming had preceded me from Cattaro, and I found myself expected. I called on the minister for foreign affairs, Mr. Stanko Radonics, with whom I had an interesting conversation.

The Prince invited me to pass an evening and to take tea with him, having also asked the diplomatic representatives residing near him. With his highness, also, I had a long conversation. None of the officials

whom I met spoke English. Several of them spoke French well, and that language is the one employed in conversation with strangers.

At the hour of my departure, I found the Prince's carriage and horses (presented to him by the Emperor of Austria) at the door to take us across the valley to the mountain road. At that point his own saddle-horse awaited me for the ascent, with two soldiers of the guard on foot to escort us over the mountain. At the frontier I dismissed them with presents, and descended the formidable mountain by the precipitous foot-path used by the natives, many of whom, both men and women, were met conveying heavy burdens on their backs.

POPULATION AND ORGANIZATION.

The minister of foreign affairs estimated the population of Montenegro at about 200,000; but added that there had been no accurate census taken. The organization is tribal, and the elected tribal chief acts as magistrate in peace and commander in war. The assemblage of these tribal chiefs forms the *skuptochina*, which the Prince consults on important occasions. There is also a senate, more frequently consulted, composed of sixteen members. To this body any Montenegrine is eligible; but, in fact, the members are chiefly taken from the most distinguished and best-known families—a sort of untitled aristocracy. Practically, the government is patriarchal, and the power of the Prince nearly absolute.

RELIGION AND EDUCATION.

The established church to which the mass of the people firmly adheres is the "Orthodox," and is affiliated with the Russian Church. The number of adherents of the Roman Church and of the Moslem faith, originally small, has been increased by some thousands since the additions of territory and population resulting from the Treaty of Berlin. The ecclesiastical and temporal power were formerly united in a prince-bishop (*vladika*). From that one—Petrovic Njegos—who liberated the Montenegrines in 1697 from the dominion of the Turks, the present Prince is descended. His successors continued to be heads of church and state until 1851, when Danilo I renounced the ecclesiastical jurisdiction with its title of *vladika*, and assumed that of *hospodar* or prince. The center of the priesthood and seat of the church is at Cetinje, where a large monastery and diocesan residence exists.

The two forms of social life which most interest the people are the fêtes and ceremonies of the church on the one hand, and on the other operations of war against the Turks. Schools are now, however, introduced into the country, and better instruction appears to be the object of increasing interest.

Up to this time a good soldier has been more important for the safety of the principality than a good schoolmaster. With the adjustment of its new frontiers there is hope for a change in the direction of governmental action toward the internal and peaceful development of the country.

CHARACTER OF THE COUNTRY, ITS PRODUCTS, AND COMMERCE.

The mountain range fronting the Adriatic Sea presents a bold and most forbidding aspect, which justifies its name of "Black Mountain."

It is lofty, precipitous, rugged, and without foliage or verdure. The Austrian Government has built up the mountain face, a little to the

south of Cattaro, a fine zigzag road intended to be practicable for wagons, and probably, I ought to add, for *artillery* also. It cost much labor and money to build it, and would have been useless without an extension into Montenegrine territory.

The poverty of the principality being a good reason to excuse the Prince from undertaking it, the Austrians gave him an annual subsidy to continue the road to Cetinje. This has nominally been done. On my return I passed over the whole extent of this route in Montenegro, and found it often nearly impracticable for wagons, and at strategical points suspiciously imperfect and easily destroyed.

A justifiable suspicion exists that the Montenegrines were quite willing to receive the money for the work, but took good and wise care that a nominally commercial road could on short notice be made impracticable for the military movements of a powerful neighbor. Their savage mountain walls form their best lines of defense, and the agility and courage of their mountaineers, rifle in hand, make them more than a match for mountain howitzers or heavier artillery, along a difficult and obstructed road. The inhabitants continue, however, to take the old and steep paths of their fathers, utterly neglecting the longer and smoother road constructed in aid of foreign interests, which they leave to the waste of time and the elements.

The valleys between the rough mountain summits have no appearance of fertility, but rather that of being forced to yield a cold and stingy product for the support of men. Often were seen old pool basins among the rocks, in the bottom of which the disintegration of stone and other waste had formed something like a soil mixed with small rocks. These were laboriously removed, in order to provide a little spot where some vegetable product could be raised. The valley of Cetinje itself, which is four or five miles long and belongs to the Black Mountain, has great spaces which cannot be made productive. It is also a basin without a stream or water outlet through its surrounding ledges of wild rock. From one of the summits on the way I had a distant view of a better country to the northeast and eastward, where there are streams and good ground for cultivation, and forests and game.

The region about Podgoritz, newly acquired from the Turks, and the Lake of Scutari were more distinctly visible. For the last two years the crops were bad and the people have suffered for necessary food; and I met numbers of them carrying sacks of grain up the steep road. Two cargoes of grain had arrived on the orders of the Prince from Odessa, one at the port of Cattaro and one at Ragusa, and these were portioned out to the poor Montenegrines. They have some herding of sheep and goats, and further eastward than Cetinje cattle are raised with advantage. As principal exports the minister mentioned skins, wool, sheep, cheese, wax, fish, sumac, and fruit. There are a few other articles exported, but the total value of exports is less than eight hundred thousand dollars per annum, and most of it not passing beyond the neighboring countries.

They have little money to expend for imports—some arms and hardware, a little clothing, some house furniture, and supplies for the wealthier families, and food in a season of bad crops.

The Prince has established a small arsenal with foreign workmen at his capital, with a view to make and repair small-arms, and to teach the art to his own people.

The commerce of the principality can never be large, by reason of the bad condition of its industry. But it will be essentially increased when a peaceful frontier shall be secured and border wars shall cease.

THE PORTS FOR THEIR EXTERIOR TRADE.

Before I had seen the country, believing that the port of Antivari, which was ceded to Montenegro in the Berlin adjustment, remained substantially as it had been, I ventured the recommendation that the United States should have a consul there. I must revoke that recommendation. The town was almost utterly destroyed and depopulated, as the result of the military operations immediately preceding the treaty of San Stefano, and hardly any use is now made of its port. The old port of Ragusa (Austrian) is used for northern and the *Bocche de Cattaro* (Austrian) for Central Montenegro.

Nothing will probably be done for Antivari till a complete settlement of frontier shall be effected on the Albanian side. If Dulcigno shall be acquired (as now in negotiation), that also will affect the value of Antivari as a national port, and will be its rival.

FOREIGN REPRESENTATION IN MONTENEGRO.

Turkey and Austria have legations at Cetinje, the former an envoy extraordinary and minister plenipotentiary, the latter a minister resident, both of whom were obliging enough to lend every aid to the objects of my visit. England has appointed her consul-general for Albania, who still resides at Scutari, as the British chargé d'affaires for Montenegro. France and Italy have also appointed chargés d'affaires near the government of the Prince; but they reside outside the principality, at Ragusa, for the greater comfort and convenience of living. Russia has a minister resident, who also resides at Ragusa.

The expense for strangers of living at Cetinje with any degree of comfort is very considerable, for all articles classed as comforts and conveniences must be brought chiefly on the shoulders of women up the mountain from Cattaro, and many of these articles must come from a distance by sea to that port.

I have only to add that His Highness Prince Nicolas appeared to be gratified with this first visit of an American representative at his capital, and spoke with interest of the small colony of his people who had settled themselves at San Francisco. He was himself educated at Paris, and is interested in the movements of civilization outside of his principality. His people are devoted to him, and he to their welfare. No one can know him or his people, and the difficult conditions under which they are seeking to develop a national existence, without a warm and friendly sympathy for both.

JOHN A. KASSON,

Envoy Extraordinary and Minister Plenipotentiary.

LEGATION OF THE UNITED STATES,
Vienna, Austria, August 4, 1880.

HOW TO INCREASE THE TRADE BETWEEN THE UNITED STATES
AND THE NETHERLANDS.

REPORT BY CONSUL ECKSTEIN, OF AMSTERDAM.

I have the honor to bring to your knowledge the fact that letters are now frequently received at this consulate, from manufacturers, producers, and merchants in the United States, making all sorts of inquiries, having for their object the introduction and sale in this country of many different articles manufactured or produced by them.

I am taking especial pains to furnish, in each case, all the information I can obtain, and which may be calculated in serving them to accomplish the desired results, the establishing of an increased export trade with the Netherlands.

I must state, however, that it is not always an easy task to furnish such information as desired, and in order to have it trustworthy and useful it involves the necessity, in nearly every case, of consulting with persons having an intimate and correct knowledge of the particular trade respecting which information is asked for.

I would at the same time observe that this subject received my fullest attention from the time I came here, five months ago, and from what I have learned relating to it I feel now justified in stating that our manufacturers and producers will do well in bestowing a proper amount of attention to the trade of Holland.

It is not only a rich country, as is generally well known, but the wealth of the Netherlands is more widely distributed than is the case in some of the other European countries; in fact, all classes are comparatively prosperous, nor is its prosperity likely to be at any time much affected by any kind of continental complications.

To this must be added that Holland carries on a large and generally profitable export trade with its Indian colonies—hence it will become obvious that it would be important if our citizens could secure to themselves such portion of the trade of this country as their many and great facilities warrant them to compete for.

The extent of this trade and the desirableness of obtaining as large a share of it as possible, are perfectly realized and appreciated by manufacturers and producers in England and on the Continent. Their agents and representatives are constantly found in this city and in other cities and towns of Holland, comparatively in larger numbers, I am credibly informed, than in any other country in Europe.

I have excellent opportunities to meet and converse with a very large number of those gentlemen, and as the nature of their employment and almost constant traveling in different European countries make them peculiarly familiar with all matters pertaining to trade and commerce, it would seem that any opinions expressed or statements made by them, respecting American manufactures and products, and their chances for finding a constantly increasing demand in Europe, are deserving of notice.

From all that they very generally and frankly admit and state, it is both plain and reasonable to infer that the present is a most propitious time for securing an increased demand and gaining a lasting foothold for American manufactures in Europe. To secure a greater share of the trade of this country, it would seem necessary for those wishing to secure it to adopt such measures as will make both merchants and consumers more familiar with American-made articles than they have been up to the present.

Printed publications and letter-writing will not effect much in this direction among a people who, like the Hollanders, are so slow in making innovations of any kind, but samples of goods ought to be exhibited and kept exhibited where they would constantly come under the notice of the multitude.

Such goods as are greatly superior in quality, and consequently much more costly than similar goods made in Europe, can only find a market here by being consigned to first-class houses, who will undertake to introduce and recommend them.

As merchants can make their profit on the cheaper articles of other countries as well, no matter how much inferior, they are unwilling to order for their own account the superior American-made articles.

D. ECKSTEIN, *Consul.*

UNITED STATES CONSULATE,

Amsterdam, The Netherlands, August 19, 1880.

IMPORTS AT AMSTERDAM FROM THE UNITED STATES.

REPORT BY CONSUL ECKSTEIN.

GENERAL IMPORTS.

The following are some of the articles of American manufacture imported and dealt in at Amsterdam and other places within this consular district, viz: House-furnishing goods, hardware, edge tools, cutlery, stoves and kitchen ranges, sewing-machines, plated wares, building materials, clocks and watches, carriages and carriage parts, wooden wares, trunks and traveling bags, paper and envelopes, slates, canned goods, starch, flour, &c.

In my last report I entered into details on the subject of this branch of business here. The indications then were that the imports of many of the said articles, which had already found a market here, would steadily increase, and that several others might be introduced in the then near future with a good chance of success.

At present, however, on reviewing the business done therein during the year 1879-'80, I cannot express the state of this trade better or more correctly than by saying that it has not quite held its own as compared with what it was during the year 1878-'79. If the chief cause ascribed as having brought this apparently unsatisfactory state of affairs, and which I shall presently mention, be not removed or removable, the import business and trade in American manufactured goods in this country will unquestionably be liable to still further reduction, if it does not result at an early day in the total loss of the footing we had already obtained, by long and constant endeavors, in partly supplying the several markets of this country with some of our wares.

The falling off in this branch of business, as explained to me by persons intimately acquainted with such matters, is attributable chiefly to the sudden, and, in some cases, considerable rise in the prices of many of our manufactured goods hitherto imported, sold, and consumed in this country. Besides which, it is said that of late many orders have been entirely neglected or not executed as promptly as they used to be, and that in some cases even articles of an inferior quality have been substituted at the same prices as the superior articles that were formerly supplied.

The fortunate return of general prosperity in the United States, which naturally goes hand in hand with a largely increased demand for commodities of every description for home consumption, sufficiently accounts for, and no doubt fully justifies, the rise in the prices of a great many articles; but unluckily the past year cannot be said to have been a prosperous one in all parts of this country, or to all the classes of its population. On the contrary most of the mechanics, the laboring as well as the lower classes generally, have been and are still compelled rigorously to observe the strictest economy and frugality; they cannot afford to

pay high prices even for the common necessities of their trade or of life, so that those who import or deal in goods intended for the use or consumption of these classes of the community are necessarily forced to look more particularly to the cost of any article than to its quality or superior workmanship.

I am inclined to think that our foreign trade may possibly be adversely influenced by similar causes in other countries besides Holland, and that this matter may be one of great importance to our manufacturers and exporters. If so, it would seem incumbent upon them to look to this, and, ere it is too late, to devise some means, if possible, to prevent the further decline if not total loss of the greater part of the foreign trade now in their hands.

If our export trade of manufactured goods is to be retained or intended to become permanent, it would seem that it should not be allowed, under any consideration, to fall off or to be seriously interrupted, and that it is quite a mistake for our people to surrender their competition even for a time, although the prosperous state of our country and the consequent increased demand for our manufactures at home may appear to render such a relinquishment necessary or desirable for the present.

American manufacturers should endeavor to find some means of maintaining their capacity of supplying foreign markets at all times, and to a great extent, with a variety of their industrial products.

In conclusion, I must not neglect to mention that it is clearly observable that the manufacturers and exporters in England, France, Germany, and Belgium are most assuredly taking advantage of the state of things treated under this head, and they will certainly not leave a stone unturned to regain the ground they have lost during the last few years through successful American competition.

BACON AND LARD.

Bacon.—Short, clear middles and long, fat-backs are the only two cuts of bacon regularly imported into Holland for home consumption. Other cuts of boxed meats, as long middles, half-long and half-short middles, shoulders, bellies, &c., are only now and then introduced, and their value varies in accordance with the market prices of the two above-mentioned leading kinds. *Short rib sides* are totally unsalable in this market. Green hams are sometimes imported during the spring; smoked hams of good brands have come more into the market of late years, and sometimes attract attention when the price leaves a sufficient margin for competition with the home produce.

During the summer, from July to the middle of September, 1879, prices were moderate, with but very little fluctuation, and the market was dull, owing to the tolerably large stock of the winter packing of 1878-'79 that still remained on hand, as well as to the pretty liberal offers of summer bacon from America.

Short middles, winter, sold at from 31½ to 33 florins per 100 kilograms, and almost equal prices were paid for fresh arrivals.

Long, fat backs, ice cured, sold at from 33 to 34 florins for 30-32 t. a., and at 36 florins for 35 t. a. average.

From the middle of September, some advance in the price established itself, originating in a diminution of offers from America, and in November and December a decided and strong rise was effected. For short middles, from 35 to 41 florins; for long, fat backs, 32, 37 to 40 florins; for long, fat backs, 36, 38 to 41 florins.

In the mean time, the stock on hand had been disposed of, as is gen-

erally the case at this time of the year, to make room for the expected imports of new bacon of the winter packing season, 1879-'80, from America.

At this new period the course of the market is entirely controlled by the news of and opinion about the probable results of the packing season in America, both as regards the number of hogs killed and the quality thereof.

The quantity being as large as that of the previous campaign in 1878-'79, people had some reason to expect that the market would open, if not at the low figures of November, 1878, at least at a moderate value. It seems, however, that different circumstances combined influenced the American market in such a measure as to make prices rapidly advance beyond all expectation, and that the said market, supported by an increased home consumption, was enabled to hold its stock, instead of largely offering the same, as is usually the case at this time of the year, and that it thereby compelled Europe to pay the higher range of prices quoted in the first months of 1880. For 26 t. a. average, 48 to 49 florins; for 30 t. a. average, 49, 50, and 51 florins; for 35 t. a. average, 52 florins.

Notwithstanding that the quality of several lots of bacon of the winter packing season was inferior to that of former years, the consumption has hitherto proved satisfactory, and a good opinion for the article was consequently maintained. Even the advance in prices during the month of July was followed by this market, and large lots were bought from America. As prices, however, during the last days of July, underwent a further advance, this might, perhaps, check business for some time to come, this market being well provided for the present.

Lard.—The market in this article cannot be so strictly divided into campaigns (embracing the period between two packing seasons) as that of bacon, on account of the old stock and speculation lots remaining on hand from former years, and of the prices of other fat stuffs competing or worked together with lard.

During the summer of 1879 the market was rather quiet, and prices advanced but very slowly. Towards the end of the year, however, the consumption showed a great increase, resulting in a sudden demand for stock lots, and thereby occasioning a considerable rise in prices. The leading brand, "Wilcox," quoted, from June to the middle of October, at from 20½ to 22 florins, and afterwards from 22 to 23 florins per 50 kilograms, rapidly advanced to from 25 to 26 florins, and great stocks in the hands of speculators were disposed of at this favorable period. A serious decrease in the consumption, however, manifested itself in the early part of 1880. Several manufacturers came into the market with lots only recently bought, and were bent on selling them at a loss. The consequence was a fall in prices during February and March from 24 and 23½ to 23 florins. In April, May, and June prices ruled from 22½ to 23 florins.

In July the market again assumed greater firmness, and prices advanced again to 23½ and 24 florins. In the last days of July much higher quotations were cabled from America. Whether this advance will be followed at this market does not seem to be as yet decided. Generally prices cannot be said to be high as yet, and the stock on hand is not large, but on the other hand the season is still unfavorable for this article.

Respecting the trade in these, as well as some other articles, I hear strong complaints from parties interested here, as to certain, what mildly expressed, I would call irregular operations indulged in during the past year, by, I suppose, irresponsible people or speculators in the

United States, and which are stated to have caused great disappointment and even loss to some merchants engaged in the import business thereof in this country.

I make mention of this fact, in so far, merely for the purpose of directing the attention of honorable and responsible firms in the export trade of the United States to the great necessity of guarding as much as possible against permitting any questionable proceedings or sharp practices being used in connection with our foreign trade.

Parties engaged in any kind of dishonorable or irregular proceedings should, when discovered, be immediately exposed, by warning foreign customers against them; for if such practices as are here referred to were to be continued, or frequently to recur, they would be sure, in time, seriously to affect the reputation of our people for commercial integrity.

TOBACCO.

During the period from July 1, 1879, to July 1, 1880, there was a marked increase in the American tobacco trade at this market. This was more particularly the case with Maryland tobacco, considerable quantities of which were imported both direct and via Bremen, Antwerp, and Havre, and found a ready sale here. As the indirect imports are not, however, regularly reported, the accompanying statement only contains the figures that refer to direct imports from America to Dutch ports.

There is a general complaint in this branch of the trade that the inspectors at Baltimore do not pay sufficient attention to the sampling of the casks of Maryland tobacco, and that many planters take advantage of this carelessness on their part.

Considerable quantities of seed-leaf, imported at Bremen after the introduction of the higher rate of duty in Germany, and subsequently sent to this market, were successfully disposed of, which was also the case, but not to such an extent, with imports of this kind of tobacco at Antwerp; and for this reason direct imports of seed-leaf in Holland were of no account.

The prices which were expected, in consequence of the tobacco duty in Germany, to go down, maintained themselves well. Early in 1880, when the reports about the new crops of all American sorts, as well as the scanty harvests of substitutes, were confirmed, the prices of ordinary Maryland, Virginia, and Kentucky tobacco rose considerably. Only seed-leaf, intended for the manufacture of cigars, did not participate in this favorable tendency of the market.

The 1879 crop of Sumatra tobacco proved to be much more abundant than that of the previous year; the quantity may be estimated at 60,000 packages, or about 4,500,000 kilograms (equivalent to 83,582 cwt). The quality, however, is inferior to that of preceding crops, and the greater part of the Sumatra produce of that year may be described as follows: Large and broad leaf, fine, great fitness for cigar covers, burns well, and has a good flavor, but the middle colors preferred here for outside leaves of cigars are wanting, the tobacco being either dark brown or light colored. The market for the 1879 crop opened dull, it being feared that the quantity would be too great in proportion to the decreased consumption, particularly in Germany, for 4,500,000 kilograms of Sumatra tobacco supplies outside covers for 3,000,000 cigars. A more favorable opinion, however, soon manifested itself, and prices have since, owing more especially to the extremely small Java crop, been continually rising. What has also greatly contributed thereto is the

good sorting of the leaves, whereby the manufacturer was, with very little waste, enabled to cover a thousand cigars with one kilogram of tobacco, besides which this kind of tobacco, having a good aspect with but little flavor, can be used for any sort of cigars. England, in particular, has become a great consumer, and America has likewise made successful experiments with Sumatra tobacco.

The 1879 crop of Java tobacco is very small, having for the greater part failed through too much rain. The quantity produced, about 60,000 packages, or 5,000,000 kilograms (equal to 98,425 cwt.), has thereby suffered very much, both in quality and capacity, so that it is but ill-fitted for covers. The leaf is well-developed, but loses the consistency required for outside covers on being steeped in water; the color is dark, it burns well, and has a good flavor. In order to keep up the price of this article, the importers have decided on not bringing the greater part of the crop to market until September. The lots that were sold yielded a loss to the planters.

The remaining kinds of tobacco occupied a less important place at this market.

The higher rate of duty on tobacco, adopted first by Germany and later by Belgium and Switzerland, has as yet had no influence of any importance on this market. The efforts used by those countries to prevail on the Netherlands Government to follow their example have failed.

The prices of American tobacco are, for the present, ruled entirely by the American markets. Sumatra is paid in proportion to its covering capacity; that is, if the tobacco burns well, has a good flavor, and is of a dark color, a thousand cigar-covers for cigars of a middling size come to about 3 and $3\frac{1}{2}$ florins. Java tobacco having more quality, can, as a rule, generally command a somewhat higher price.

Statement of the imports and sales of tobacco from July 1, 1879, to July 1, 1880, at Amsterdam.

	Java.	Sumatra.	Maryland.	Kentucky and Virginia.
	<i>Packages.</i>	<i>Packages.</i>	<i>Casks.</i>	<i>Casks.</i>
Stock, July 1, 1879.....	24, 930	12, 909	2, 248	355
Imports since.....	53, 756	48, 356	5, 932	126
	78, 686	61, 355	8, 180	481
Sales since.....	70, 937	48, 805	6, 968	252
Stock, June 30, 1880.....	7, 749	12, 550	1, 212	229

D. ECKSTEIN, *Consul.*

UNITED STATES CONSULATE,
Amsterdam, The Netherlands, October, 1880.

AGRICULTURE AND AGRICULTURAL IMPLEMENTS IN ROUMANIA.

REPORT BY CONSUL-GENERAL SCHUYLER, OF BUCHAREST.

I have the honor to acknowledge the receipt of the circular of the Department of State, dated July 1, 1880, with regard to the more frequent publication of consular reports.

In studying the agriculture of Roumania, it has seemed to me that

there exists an opening for American enterprise in this country in agricultural machines and implements. I therefore beg to submit the following report:

AGRICULTURE AND AGRICULTURAL METHODS IN ROUMANIA.

The riches of Roumania consist chiefly in agricultural products. Agriculture is the chief business of the inhabitants, and agricultural products form by far the greater portion of the exports of the principality.

In 1873, the latest year for which we have any statistics, the cultivated land in the principality was divided as follows:

	Acres.
Maize.....	3, 196, 000
Wheat.....	2, 480, 000
Barley.....	880, 000
Rye.....	259, 000
Oats.....	248, 000
Buckwheat.....	11, 000
Millet and small grains.....	226, 000
Dry vegetables.....	250, 000
Potatoes.....	1, 000
Kitchen and market gardens.....	455, 000
Coltza.....	220, 000
Hemp.....	13, 000
Flax.....	6, 000
Tobacco.....	5, 000
Vines.....	255, 000

The average annual agricultural production of Roumania is estimated as follows:

Maize.....	bushels..	42, 397, 000
Wheat.....	do.....	28, 543, 000
Barley.....	do.....	10, 059, 000
Rye.....	do.....	3, 029, 000
Oats.....	do.....	1, 543, 000
Millet.....	do.....	2, 507, 000
Buckwheat.....	do.....	177, 000
Coltza.....	do.....	1, 184, 000
Beans and lentils.....	pounds..	18, 672, 000
Potatoes.....	do.....	51, 378, 000
Hemp.....	do.....	4, 985, 000
Flaxseed.....	do.....	1, 683, 000
Tobacco.....	do.....	1, 978, 000
Wine.....	gallons..	35, 000, 000

In addition to the amount used in the country, we find that the agricultural exports in 1879 were as follows:

EXPORTS.

Articles.	Quantity.	Value.
	<i>Pounds.</i>	
Wheat.....	991, 000, 000	\$16, 218, 000
Rye.....	132, 500, 000	1, 445, 000
Maize.....	1, 244, 780, 000	14, 579, 000
Barley.....	333, 693, 000	3, 032, 000
Other cereals.....	39, 367, 000	457, 000
Farinaceous vegetables.....	39, 400, 000	1, 343, 000
Wheat flour.....	23, 750, 000	617, 000
Coltza, &c.....	59, 900, 000	1, 633, 000

The meadows and pasture lands in Roumania are estimated to cover six and a half million acres, and the average yearly production of hay is valued at two million tons.

As to the agricultural methods employed in Roumania, I allow myself to quote the following passages from an article which recently appeared in the London Times. This article was written by Mr. E. M. Grant, an American civil engineer, who has resided in Roumania for some time, and who has given the subject the most careful attention. He obtained much of his information by direct correspondence with trustworthy persons throughout the country, and his statements can, I think, be thoroughly relied on.

The greater part of the plowing done in Roumania is performed with the primitive implements used by the ancestors of the present proprietors, and which are little more than a curved branch of a tree with a piece of iron as a point to penetrate the earth. The natural effect of such a plow is, of course, to break up the ground, turn over half of it, and push aside the other half in lumps, which are left unturned, instead of a clean smooth furrow, as left by the modern implement, which insures a fresh surface turned up to the light and heat of the sun at each plowing.

The peasants say that these rude utensils can easily be repaired, as they always carry the simple tools which are necessary for this purpose; whereas, if the cast-iron or steel land-sides or mold-boards of the modern plow are broken, they must send long distances to have them replaced. This objection could be met by establishing village depots for the sale of these parts of a plow, and also by sending duplicates with each implement sold; but, as these rural depots have not yet been established, there still remains a good deal of force in the peasant's reasoning. The large proprietors, however, especially in Moldavia, have introduced large numbers of modern plows. Some English plows are used in the country, but the greater part of those imported come from Austria. The farmers assert that the English plows are not adapted to their country, and that they are too heavy for the easily worked soil of Roumania, and require too much expenditure of animal labor in hauling them. English makers, if they desire to secure a trade in the East, should send out practical experts to study the nature of the soil and the wants of the people, so as to be able to produce an implement suitable for the market. There are five steam plows in Roumania, but their great cost, difficulty of making repairs, want of regular systems of drainage to remove soft, wet places in the fields, which serve as traps to imbed the unwieldy machines, and the weak bridges, which are incompetent to bear the weight of the apparatus when being transported from one locality to another, all combine to render the prospect of the steam plow becoming a prominent feature in Roumanian agricultural operations a very precarious one for the next half century at least. The official returns of 1874 give the following as the number of plows (native and foreign) and other farming machines in the principality at that time: 185,835 common plows of the country; 37,661 improved foreign plows; 989 steam thrashing machines; 362 thrashing-machines worked by animal labor; 31 mowing-machines; and 469 reaping-machines. In 1877, the latest year for which there are any statistics in the departments at Bucharest, the number of common plows of the country was only 146,413; the number of imported plows, 43,997; thrashing-machines (steam and animal power, as the varieties are no longer kept separate), 3,989; reaping and mowing machines, 577; sowing-machines, 188. There was, therefore, in 1877, a decrease of 39,422 common plows, and an increase of 6,336 imported plows; an increase of 2,638 thrashing-machines, and of 77 mowing and reaping machines. It is probable that the 6,336 plows of foreign manufacture imported since 1874 are equivalent or superior (in amount of work done) to the 39,422 decrease in the number of common plows of the country. Mr. Lee, who is engaged in the agricultural implement trade here, informs me that the first steam thrashing-machine was introduced into Roumania in the year 1860. Consequently there has been a creditable increase in this species of farming machinery.

There are no barns for storing unthrashed grain in the principality, hence the newly-cut crops are stacked in immense piles near the village; and as the old way of thrashing by treading out the grain with horses was both slow and wasteful, the steam thrashers forced themselves upon the proprietors by their own merits and the necessity of getting the grain out of the straw during the fine weather which always succeeds the harvesting season in this quarter of Europe. The thrashers go from village to village, and are now so generally distributed that nearly all the grain grown in this country is thrashed by machinery. Mr. Lee has delivered 150 steam thrashing-machines of English manufacture, and he states that nearly all of those in use in Roumania are made in England. A large proportion of them are the property of persons who enter the business as a speculation, thrashing the grain for a percentage or for a sum of money.

The use of harrows is by no means universal in Roumania. In their absence the seed is sometimes covered by the time-honored custom of dragging a tree top behind a pair of bullocks, which answers the purpose tolerably well when the land is very mellow and free from lumps, stones, or old stubble. Where neither of these systems is in

vogue, the seed is sown broadcast before the land is plowed, and the plow, therefore, covers it with the furrow. This is the general custom in Bulgaria. The use of drills or sowing-machines is coming into fashion, as it will be seen above, 188 of them being used in the principality in 1877; but with these machines the land should be harrowed beforehand in order to insure the smooth and even planting of the seed. The amount of seed sown per acre in Roumania is excessive; and, in fact, it is nearly double in quantity that used in the United States. This naturally enough detracts to a serious extent from the legitimate profits of the farmer, as the surplus is not only wasted, but the crowding of the stalks of grain interferes with their proper growth. This wasteful system of seedling probably came in vogue before the process of harrowing was invented, and when the grain was sown broadcast, and then ploughed under with the primitive implements already described. The half furrow, half lumpy action of this plow, left a large portion of the seed exposed to view, and it was picked up by the birds. Another portion was so deeply buried that it never came to the surface. Old customs cling to life with wondrous tenacity, and it is probably to the above facts that Roumanian farming owes its wasteful system of planting crops.

The amount of seed used for the principal grains grown in this country is as follows: Wheat, 2 bushels 27 quarts per acre; rye, 2 bushels 27 quarts; barley, 3 bushels 10 quarts; oats, 3 bushels 10 quarts; maize, 13 quarts; buckwheat, 26 quarts; millet and other small grains, 13 quarts per acre.

The cultivation of the crops of maize and potatoes (which need considerable care between the planting and the harvest) is very slack. There is none of the "shovel plows" used by all the farmers in America for clearing the weeds and grass from the spaces between the rows, which render the hoe nearly useless, so perfect is their operation. The peasants use heavy, awkward hoes, of native manufacture, and, as the labor of raising this cumbersome implement for a chopping cut is no slight one, the number of such cuts per day is not very extensive; and, as a natural consequence, there is much choking of the crops by weeds and a proportionate reduction in the product of the land. In handling the hay and other crops the laborers use wooden forks, made from forked brushwood, which enable them to take up about one half the quantity raised by a farm hand in America with light steel-pronged forks with hickory handles. In digging the potatoes, when the crop has matured, awkward iron shovels, made by gypsy smiths, take the place of the five-pronged, light steel "potato-hook" used universally in the United States—an implement which digs twice as fast as a shovel, and cuts and mars the potatoes themselves very much less than its gypsy-made predecessor. When reaping-machines are not used in cutting the grain crops, the old fashioned sickle is employed. The self-binding reaping machine is looked forward to by the proprietors here as the means of securing their crops in good season in future, as the peasants generally refuse to hire themselves to bind behind a reaping-machine of the old style. They insist upon being employed to cut the grain, as well as to bind and "shock" it. This unaccountable peculiarity in the labor question in Roumania has prevented the more general introduction of reaping-machines. The self-binders will also enable the proprietors to raise much larger areas of grain, as at the present time their operations are seriously curtailed on account of the great difficulty of procuring harvest hands at the proper time, in order to secure the crops in the best possible condition.

It will be seen from the above that it is possible to give still further extension to the importation of agricultural implements and machinery.

There is no import duty in Roumania, either on agricultural implements or on agricultural machines.

There is one difficulty in the way of any great extension of trade in the high rates of freight from the United States to Galatz, the first Roumanian port on the Danube. On the last machines that were imported here from New York, the freight was so great that what cost one dollar in New York cost eight and a half francs on arrival here. It is highly probable that a saving could be effected by taking advantage of the new Florio line of steamers, which I believe touch at Marseilles on their way back from New York to Naples. Freights by steamer from Marseilles to Galatz are comparatively reasonable.

There are several dealers in agricultural machines and implements in Bucharest, some Roumanians and some Germans, but from what I can learn I think American manufacturers, desirous of information, could not do better than enter into relations with the gentlemen referred to in the extract from the "*Times*," Mr. J. Lee, Strada Smârdan, Bucharest.

He is recommended to me as in the highest degree trustworthy and energetic, and has lived over eighteen years in Roumania, and possesses a perfect knowledge of the language as well as great acquaintance with the business of the country.

EUGENE SCHUYLER,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Bucharest, Roumania, September 28, 1880.

EXTENSION OF AMERICAN TRADE IN RUSSIA.

REPORT BY CONSUL DYER, OF ODESSA.

Referring to circular dispatch of July 1 last, with reference to consular reports, and more particularly to that portion thereof which states that our principal efforts must be directed to the introduction of American trade into and the enlargement thereof in our several districts, I have the honor to state that anything that I can say upon that subject would simply be a repetition of what I have previously written to the honorable department in my official reports, and also to very many American merchants and manufacturers in private correspondence.

Four years ago, with but a limited knowledge of this country and its wants, I concluded, and so reported, that the proper and what appeared to me the only plan by which our trade could be enlarged in this country was the establishment of depots for the exhibition of our goods, and that American merchants and manufacturers should combine and establish such a depot here at Odessa, the expense to be borne by the parties interested. A further residence in the country has only strengthened that opinion.

That Odessa possesses very great and superior advantages as a central point, from whence ninety per cent. of all importations made into all Southern Russia are distributed, I have often shown, and for that reason I have recommended the establishment of such a depot here.

I have also stated that it is impossible to find people here with sufficient means to engage exclusively in such an enterprise, the capital of the country being wholly devoted to the handling of grain, and which entirely engages the limited capital of the country.

So far as I know, the only American goods that can be profitably introduced into this country are machinery for agricultural purposes and tools, with now and then, perhaps, small articles of special usefulness and utility, that, from time to time, appear and are utterly unknown here, and which must be seen to be appreciated. But it would be an assumption on my part to say that other goods might not be brought here and sold in large quantities.

A consul may be supposed to know a great many things, but it cannot be expected that he can, or will, be a specialist on all subjects. The first years of every consul's experience must be devoted to making himself somewhat familiar with the country in which he is located, with its language, in most cases, in making acquaintances and hearing people on whose judgment he may rely, in finding out the wants of the country, the customs of business, &c. Then he must know the customs laws, the rates of duty, the rights of his countrymen, the operation of the courts, and a thousand other things, too numerous to mention, in

order to intelligently inform and advise his home correspondents in relation to all that is necessary for them to know before it can be decided whether they may safely and profitably enter into business relations with a foreign country.

It would, then, be asking much of him that he should know just what article would sell from a country so prolific in new inventions and improvements as the United States. The customs duties are here paid on the weight of goods as a rule, and the different component parts of an article must be known to him before he can even say what the duty would be. He must know how many pounds of iron, of wood, brass, copper, &c., before he can even form an idea on the subject. Then, with the exception of well known and staple articles, as to whether they would sell, he knows nothing. The catalogues and some journals, such as the *Scientific American*, the *American Exporter*, and the *American Mail and Export Journal*, the make up of which is simply perfect, furnish a fair idea by their cuts and engravings, but in the English language they lose much of their value in Russia, because but few people know the English language.

The consul must go about and explain the article to his friends, and is told "Yes, perhaps it is good, but perhaps not. America is a long way off; we have no business relations, we have our credits on the Continent and in England, and do not care to do business with people to whom we are not known and whom we do not know, and with goods of which we know nothing. If we could see the article and know that it is useful, perhaps we might buy," &c.

The correspondence of my consulate is enormous in relation to this subject, and is irksome to the last degree, because I cannot in many, and frankly must say in most, cases know whether the thousand and one articles, about which people ask information, would sell here or not. It is always a pleasure to give information that is reliable, intelligent, and useful, but the endless repetition of surmises, opinions, and doubts is tiresome. I am gratified, for this reason, that the consular reports are to be published in a manner and form that will enable them to be more useful and the information they contain accessible.

Inasmuch as a house cannot be found here that will assume to establish a depot for the exhibition of American goods, and as it appears the goods must be exhibited in order to know whether they are suitable and can be sold in the country, I have thought it desirable that such a house should be organized in America and sent here for that purpose. A number of manufacturers might combine for that purpose, and such of them as found that their goods did not sell might retire and the others remain.

The McCormick Reaper Company, of Chicago, has recently sent its agents here and have made a thorough organization throughout the country for the exhibition and sale of its self-binding reaper. Why might not other firms propose to this company to join in the enterprise, paying a share of the expense, and avail themselves of the agents of McCormick in the various towns and cities. The expense would not be very great, and the samples that would be sent would have proper care and a result highly satisfactory might be attained. The goods not salable could always be returned, and the manufacturer have the satisfaction of knowing that he was certain whether his goods would sell or not.

The foregoing is what I conclude is the best plan, inasmuch as the combined energy and capital of several people would be more efficacious in securing a more general exhibition of the goods. Failing this, however, and answering the demand from Odessa and the country tributary

thereto, I have thought of the following as being worthy of consideration:

At my solicitation a gentleman here, with splendid business capacity and connections, and with capital sufficient for his purpose, has opened a wareroom for the exhibition of such samples as may be sent to him for that purpose. He has been appointed Odessa agent for the McCormick Reaper Company, and, I think, has given perfect satisfaction in that capacity. He proposes to pay all expenses, from the point of shipment, of such samples as may be sent to him for exhibition, to take proper care of the goods, to exhibit them in the store and field, and show their advantages to the people and to solicit and take orders for them, or to buy himself, should the samples please customers. He expects, should he order goods, to furnish such references as would be required of him in any country, or else to remit the money with his order. Having furnished proper and satisfactory references as to his responsibility, he expects that American merchants would be willing to give him the same credits as he could have on the Continent or in England. He asks only that such persons as desire to sell goods here may send him samples, that he may know the cost at the custom-house, the freight, &c., and whether the goods will please his customers.

Inasmuch as the person mentioned is an honest, reliable, and capable man, and will devote his attention exclusively to American goods, I have thought that our merchants would do well to make an effort, through him, to reach and extend their trade in this country.

I have, therefore, written to very many firms in that sense, and have recently sent a circular letter, a copy of which I beg to inclose herewith. As stated in the said letter, many samples have been sent, and it is a pleasure to me to state that in almost every case orders have been sent for the goods represented by them, and I think that in every case the sample has, or will be, sold for enough to pay the cost price.

A good many merchants have answered that their goods would be sent upon receipt of the price, and that otherwise they did not care to send. Certainly such people, if they wish to introduce a business here, are blind to their interests. The occasion is a good one, and I hope advantage may be taken of it.

If the circular letter herewith inclosed is not found objectionable, I hope it may be considered a part of this report and be published therewith.

My mind appears to have settled upon the ideas above presented, and if the suggestions made do not meet the judgment of merchants and manufacturers and induce them to try the plan proposed, I fear that no effort of mine will tend to the enlargement of our trade here. The future appears to me to rest with dealers themselves.

LEANDER E. DYER, *Consul.*

UNITED STATES CONSULATE,
Odessa, Russia, September 25, 1880.

[Inclosure in Consul Dyer's report.]

TO AMERICAN MANUFACTURERS AND EXPORTERS.

UNITED STATES CONSULATE,
ODESSA, RUSSIA, September 17, 1880.

Under instructions from the honorable Secretary of State, the consular corps throughout the world is using extraordinary exertions for the extension of American trade in the various countries to which they are accredited.

I have not been idle here, and under proper circumstances and with a proper co-oper-

ation on the part of American manufacturers, the field occupied by me may be considered a reasonably good one. The Russian people, under pressure of American competition, are turning their attention to agricultural and labor-saving machinery, and as the United States is their principal competitor in the grain markets of the world, and also in consideration of the cordial and friendly relations that have so long existed between the United States and the Russian Empire, these people turn naturally to us and to our machinery and implements and think that the articles which enable the people of the United States to so warmly compete with them can be made, to some extent, to neutralize the effect of that competition and place them on a more equal footing than they have recently occupied. They are trying experiments and seeking to find the articles best suited to their system of cultivation, their labor, climate, and productions. This condition of affairs affords a splendid opportunity to the manufacturers of the United States to introduce their goods.

My object in addressing you is to suggest for your consideration what appears to me as the best means to attain that end.

The farmer must be enabled to see samples of the goods he is expected to purchase, and, when possible, have an opportunity to see, in use, the article before purchasing. Manufacturers of other countries afford that opportunity.

In a country like this where capital is limited, it is very difficult if not impossible to find people who will take the risk of ordering samples of unknown goods from people also unknown, for exhibition.

This would require an enormous capital, but for each manufacturer to furnish samples of his goods would be but a simple matter, and from them small orders could be taken.

With a view of enabling the manufacturers to place themselves in relations with the purchasing classes of this country, I have induced Mr. John Mayewsky, of this city, a most capable and reliable man, with proper connections and facilities and with enough capital for his purposes, to receive such samples as may be sent to him, to pay all expenses from the point of shipment, to be responsible for the proper care and exhibition of the goods, and to remit proceeds of such samples as may be sold, and to return such as may not be suitable and salable in the country to the proper owner thereof.

In case Mr. Mayewsky should order goods from the samples sent to him, it would be best for him to give such references as would be satisfactory to the manufacturer.

Mr. Mayewsky is the local agent for the McCormick Reaper Company, of Chicago, Ill., and I have no doubt but that company would furnish such information in regard to his capacity and trustworthiness as has been forwarded by special agents who have been here and know him personally.

There are other good and responsible people here who would do what Mr. M. proposes to do, but as he proposes to make his business exclusively American, for that reason I recommend him in preference.

Many samples have been sent here, and in but four cases has business failed to result. In the four cases the hope is not abandoned, but the articles are yet on trial.

Among the firms that have sent goods upon my recommendation, I take the liberty of naming the following: The Yale Lock Manufacturing Company, Stamford, Conn.; the Gould Manufacturing Company, Seneca Falls, N. Y.; C. W. Harrison & Co., No. 21 Cliff street, New York; the Goodall Company, Antrim, N. H. The people have had orders from their samples, and, as their goods are highly appreciated, they may hope for a good future.

Should other samples now in the country be found successful at work, the above list would be largely increased. Should the goods not be found suitable, the samples will be returned as the manufacturer may direct.

Many people have responded, to a proposition to send samples, that they would send upon the receipt of the price; but certainly it ought not to be expected that the people here will take all the risk and chance of the introduction of unknown and untried goods. The maker knows that the article he offers is good and useful, but these people know nothing about it, nor do they know the maker. It occurs to me that the manufacturer who wants to extend his trade should be willing to assist an enterprise of this nature, when an opportunity is afforded him in which there is so small a risk and a reasonable prospect of so large a gain in his favor. The expense here will be large, but in all that he has no share.

Mr. Mayewsky has arranged that all goods consigned to Mr. E. Benedict, Pier No. 41, North River, New York, will be forwarded by that gentleman, who will effect insurance and receipt for the goods.

I have known Mr. Mayewsky for five years, and cordially recommend him to the favorable notice of such persons as wish to do business in this country.

I have given the subject herein treated much thought and attention, and also commend the plan above proposed to your consideration.

Your obedient servant,

LEANDER E. DYER,
United States Consul.

PETROLEUM DEVELOPMENT IN RUSSIA.*REPORT OF CONSUL DYER, OF ODESSA.***THE PETROLEUM DISTRICT OF BAKU.**

In accordance with instructions contained in dispatch No. 53 of March 18 last, I proceeded to Baku, and have the honor to report as follows regarding the petroleum district located on the Caspian Sea at that point:

Baku (and the petroleum district thereof) is located on the Peninsula of Apscheron, in latitude 40 and 41 north and longitude 47 and 48 east. The peninsula is about 15 miles wide at the base and projects into the Caspian Sea to the east, between nearly parallel lines, almost 30 miles, approaching to a point only near its eastern terminus.

The Caucasus range of mountains, which commences east of the Straits of Kerch, on the Black Sea, in a succession of hills which finally rise to a lofty altitude, extends in a southeastwardly direction a distance of from five to six hundred miles, tapering at the eastern terminus in another succession of hills as at its commencement at the Black Sea.

The peninsula on which Baku is situated is at the eastern extremity of this mountain range, and the hills mentioned and the town of Baku are at the base of the Peninsula. This point of land is a high sandy plain sloping to the sea, which surrounds its three sides.

In consequence of the formation terminating there, excessive winds prevail which send the sand in clouds, thus giving a particularly dry and desert appearance to the place. In some places a blue-gray stone shows itself, but the face of the peninsula is generally covered with clay and sand.

A very small portion of the land is cultivated, but in consequence of the dryness and poverty of the soil it is totally unproductive. In many places great flats of the surface are covered with pools and lakes of naphtha and soil saturated therewith.

The Caspian Sea around this point of land, as indeed it generally is all around its coast, is shallow, and vessels of only very light draft can approach the shore. Baku has a well-protected harbor, exposed only to the south, and vessels of light (8 feet) draft find good mooring half a mile from the quay. The bay makes a long sweeping bend in front of the town, and for four to five miles east and south, where many of the refineries are situated, thus affording splendid facilities for the shipment of their products by sailing ships, vessels, and barges of light draft, which lie alongside the bridges extending into the sea.

HISTORY OF PETROLEUM PRODUCTION.

From time immemorial oil has been known to exist at Baku, and for generations the natives have taken it for greasing their vehicles, preparing skins for wine, &c., and for use in the southern countries for embalming the dead, and even in some cases for illuminating purposes. Their wants were, however, small, and the surface production was sufficient.

The wells that were dug were rather receptacles for the surface oil than otherwise, as they were simply holes dug in the earth a few feet deep.

From the time of the Russian occupation of the country in 1723, down to 1825, this condition of the industry remained almost neglected. From 1813 something was done, but nothing of importance, and the total revenue to the government arising from it was less than \$40,000 per year. From time to time private persons took the privilege, and at times the Crown worked them to some extent. The price charged for the crude oil was as high as 4 rubles per pood of 36 pounds, and thus the industry was destroyed.

In 1850 the government gave a monopoly, and limited the selling price of crude oil to 45 kopecks the pood, and received the sum of 200,000 rubles for the privilege.

This monopoly was farmed out every four years to the best, or perhaps the favorite, bidder. In 1868 a commission was formed to take into consideration the industry, the results of whose deliberations we shall see hereafter.

It was about the year 1832 that the industry began to assume anything like business proportions, but even then it was managed so badly that it remained very insignificant. A few wells were dug (as wells for water are dug), and the government even refused permission for an enterprising lessee to work with any kind of boring tools, the officer replying that such things had been tried, but that they had not succeeded, and consequently could not be tried again at Baku.

In 1872, in pursuance of recommendations of the committee above-mentioned, the territory upon which there were surface indications was divided into plats of 25 acres each, and sold to the highest bidder by sealed proposals.

By this time the field had attracted much attention, and the parcels were disposed of for (in some instances) enormous prices. All kinds and conditions of people became so excited on the oil question that they freely invested their money in these parcels. In many, and, indeed, in most cases, purchases were made by persons who had not the means to work their possessions, nor the experience, had they possessed the capital. They, however, held on to their lands, hoping in some manner to reap a golden harvest. By reason of this, capital and experience were kept away, and the industry was worked in a most crude and unsatisfactory manner.

The arrival of a stranger in the town at once caused petroleum lands to mount enormously in price, thus preventing the property from passing into proper and competent hands.

In addition to the price paid for the purchase of the lands each proprietor pays annually to the Crown the sum of 10 rubles, equal to \$5, for each two and a half acres.

The product of the refineries was, however, so bad, and the market so small, that there was not energy enough engaged to bring on a crisis in the industry. The government had placed an excise tax, which, under the circumstances, was unbearable, and for a time previous to 1878 the operators were upon the verge of ruin. No work was done except to fill contracts previously made. At Nishni Novgorod there was in store more than one and a half millions of poods, almost 200,000 barrels, unsold, and the price had gone down from 3.50 rubles to 1.30 rubles per pood.

The government then removed the excise tax, and now there remains only a small tax, collected by the town of Baku, of 2 cents on each retort of the capacity of 675 gallons, and of 10 rubles per year on each of a capacity greater than that quantity. This tax is for municipal purposes in the maintenance of roads, bridges, quays, &c. The industry,

then, after the removal of the excise tax, commenced to largely develop, as we shall see hereafter.

The real birth, however, of the industry may be said to be the year 1872, when the lands passed into private hands. Since that time, as will be noticed by the table of exports No. 1 herewith, the production has grown rapidly and the quality has, to some extent, kept pace with the production.

There has been since that time great but insufficient energy and activity displayed. The operators have no relations with each other, and every one has been trying to defeat his neighbor, and thus they have done themselves and the industry much harm. Many small owners, for want of means to work their property, have been obliged to sell, and some capitalists have entered simply as refiners, buying the crude oil for that purpose.

As will be seen hereafter, some of these refineries have grown to large proportions, and the principal ones are now making such improvements and changes as to make them first-class establishments capable of enormous and thorough work.

THE EXTENT OF TERRITORY.

The territory now worked does not exceed six square miles, if, indeed, that much. From point to point the greatest distance does not exceed $11\frac{1}{2}$ miles. The principal field is at Balaxame, $9\frac{1}{2}$ miles north of east of Baku, covering a territory of say $3\frac{1}{2}$ by $1\frac{1}{2}$ miles. Two miles south of Baku is a small field at Bēbēābāt, on which there are some 25 wells. This is a very small territory of say $\frac{3}{4}$ of a mile square. Between these two points no considerable quantities of oil have been discovered, but there are in many places surface indications only less pronounced than the fields now worked. It is generally believed and, perhaps, it is reasonable to presume, that oil exists between the two points now worked, and almost certainly at those points where similar indications exist.

Outside of this district there are also many evidences of the existence of oil, such as gas, saturated earth, &c., but the territory is unexplored. It is known that this peninsula is the seat of the ancient fire worshippers. They yet have their place of worship there, near Badu, and priests from India conduct their services. Gas is obtained in inexhaustible quantities by simply pressing down into the earth pipes, which conduct it to their temple.

Ten miles southeast from Baku is an island, upon which was built a refinery fifteen years ago. It operated for a year and was then destroyed by fire. It is certain that oil exists there, but in what quantities is not known, as the field has not been properly and thoroughly explored.

Within a radius of 50 miles there are constant surface indications, and even some small wells, as above mentioned, and there is no reasonable doubt that oil exists at those several points.

On the eastern coast of the Caspian opposite Baku and thence southward there are said to be many indications of oil in as large quantities as at Baku.

Some wells have been drilled near the present producing wells at Balaxame, and but little oil found, although they were dug deeper than was usual in the adjoining district. When it is considered that the wells at Balaxame are so shallow, this circumstance does not strongly argue against the existence of oil in the cases mentioned had the wells been drilled deeper.

In regard, then, to the extent of territory, it may be said that almost

nothing is known. There has never been a proper geological or scientific survey of the surrounding country, and, except where surface indications exist, there is absolutely no ground upon which to base an intelligent opinion.

With all the circumstances, however, considered, it may fairly be presumed that the territory where oil exists is very large, but the known and explored territory is as above mentioned.

THE PRESENT STATE OF DEVELOPMENT.

The working of the territory may be said to be only commenced. As above stated, the exploitation is confined to a very small district, and even in that small district there is but here and there a group of wells. In some places they are very close together, but the district appears capable of five, if not ten, times the present degree of working.

In 1850 there were in all 136 wells. In 1862 there were 220, and in 1872, when the lands passed into the hands of private owners, there were 415. These were wells dug as water-wells are, as above stated. In 1871 the first well was *bored*. In 1872 there was 1; in 1873 there were 17; in 1874, 50; in 1875, 63; in 1876, 101; in 1879, 301. That is to say, that up to the beginning of 1879 there were 301 *bored* wells in the district. The other wells had entirely ceased to be worked. During the year 1879, and so far in 1880, there has been very much work done, but the exact figures are not attainable. The business is in a most confused condition now, in consequence of the changes that are being made. Many new wells have been commenced, and a very large number of those previously worked are being drilled deeper.

If the figures given may be relied upon, that is, 301 wells up to 1879, it may now, perhaps, be said that the 1st of July, 1880, about 500 wells had been commenced. Many of them are not completed, and some have been abandoned.

CAPACITY OF THE DISTRICT.

No correct statement of the quantity produced by the wells can be made, inasmuch as in many instances a large quantity of the oil flows away and is lost; the facilities for preserving and working it are so inadequate. At present the price is so low that the oil is scarcely worth preservation, and the fountains are allowed to flow, the oil running away into the sea or sinking away in the sand.

How long the territory will bear such a wasteful drain is a question that might very well be considered.

The table herewith, marked No. 2, exhibits the productions at the beginning of 1879, and the opinion prevails that the wells are now capable of a production of more than 1,500,000 barrels of refined oil. At the end of 1880 the possible production would be not far from 2,000,000. There are flowing fountains said to be capable of more than 6,000 barrels crude oil per day. From a fountain at Balaxame, 98 feet deep, for two years there flowed a large quantity of oil, and it is now producing 800 barrels per day. One, near the same place, 490 feet deep, was throwing a stream 30 feet in the air, and had flooded the field for a considerable distance in every direction, overflowing other wells and small refineries, thus rendering work about them impossible. Oil and gas came from it with a roar that might be heard a mile away.

At Belcabit, another fountain, 540 feet deep, was flowing, and sent a stream of oil down to the sea that was 3 inches deep in the track through

which it ran. In these instances no effort was being made to save more than a small portion of the oil or to stop the flow.

It will be remarked that the table herewith, marked No. 3, exhibits wells as follows in capacity:

Product, crude oil, per day of twenty-four hours :	Barrels.
Four wells	1, 250
Two wells	1, 825
Two wells	2, 500
One well	1, 500
One well	1, 750
One well	3, 125
Two wells	3, 750

The remainder of the wells descending in capacity down to less than 20 barrels.

This table does not show the wells of 1879 and 1880, and it is quite probable that the capacity of 6,000 barrels has been reached, as the wells are now bored deeper than formerly.

It is, however, proper to state that in the districts in which the largest production is obtained the quality of the oil is of a very low grade, and in some instances almost unsalable at any price. These fountains are also generally of very short duration, rarely lasting four months without pumping.

It is, however, said, and the figures appear to indicate, that the average production of the best wells is almost 2,500 barrels a day. Fabulous stories are told of wells that have flowed a million of gallons daily. The fountains and wells do certainly produce an enormous quantity of oil, but I do not know how to estimate that production. From the circumstances mentioned it will at once be conceded that the capacity of the district has not been and cannot be tested. The price is so low, the system of work so bad, the operators so careless and inexperienced, that a very large quantity goes to waste, and the wells are not worked to their capacity. In addition to this, a very large number of the wells are so shallow that their capacity is necessarily small, when it is almost certain that a deepening of them would add very greatly to their value. But the price of and the demand for the article does not justify any expense upon them. The people at Baku do not appear to have any contemplation that there is a limit to the supply, and I am myself of the opinion that the limit is at least very large.

THE MODE OF OPERATIONS.

The system of drilling generally adopted is what is known as the "pole-tool system"; that is, a series of iron rods extending from the power to the bottom of the well. These rods are in sections of about 25 feet each, and as the well goes deeper the sections are added by being screwed together at the ends. In clay and sand the instrument used is called a shell, and the hole is made by turning the shell, as a hole is made with an augur.

When the first hole is made to a depth of from 6 to 8 feet a tool is put on to enlarge it. Then the pipe (of $\frac{3}{4}$ -inch sheet-iron, riveted together) is at once pressed down to its place in like sections of 6 to 8 feet. When rock or stone is encountered a bit is put on in the place of the shell, which cuts the stone as in America. The power applied is generally a common hand-winch. When more difficult work occurs a lever is arranged, of about 25 feet in length, and the fulcrum so placed that the weight of 6 to 8 men will overcome the weight of the tools. The men

bear down on the lever, and when the tools are raised they free themselves from it, allowing the tools to descend by their weight in the well.

In some few instances steam-winchies have been used, but the work is generally so light and the wells so shallow that except in cases where steam is already on the premises the expense is not justified. The steam machines cost very dear in transportation, and must always be ordered from abroad.

The American system of rope-boring has been tried, and, although much quicker in its work, only with partial success. The expense attending the procuration of the necessary appliances, and the necessity of enlarging the hole for the pipes, which must finally be done by the pole-tools, does away with the benefits of the American system. The enlargement must be made in consequence of the system of pumping, which requires a diameter greater than would be necessary could another system be adopted.

Many of the wells are operated by persons who have not the capital to properly work, and, speaking generally, it may be said that the mode of operation is very crude and imperfect for want of tools and facilities, as well as experience. It is, however, to be said in their favor that they are rapidly learning, and, considering all the difficulties, they succeed fairly well.

THE DEPTH AND COST OF WELLS.

The old wells were dug from 6 to 30 feet deep, but when the system of boring was adopted wells were made deeper. After the sale to private persons, in 1872, the usual depth was from 70 to 100 feet, and oil was generally found, but not in large quantities. From time to time, since 1872, they have gone deeper and deeper, until now the usual depth is from 350 to 560 feet; the first figures representing the shallower and the latter the deeper wells.

The depth of course depends on the territory, and some (very few) wells have been made as deep as 700 feet. Table No. 3, herewith, shows only one well as deep as 609 feet, and but few more than 400 feet. In the last year and a half they have gone somewhat deeper than these figures show.

It is said that a depth of 560 in what is called "known territory" has never failed to produce oil in large and generally enormous quantities. As has been mentioned, some efforts have failed that were made in territory adjacent to that kind of land, although the wells were deeper than usual. The expense of making wells, according to a list of prices furnished me, is about as follows:

To 10 fathoms, at \$30 per fathom	\$300
To 15 fathoms, at \$35 per fathom	525
To 20 fathoms, at \$40 per fathom	800
To 25 fathoms, at \$45 per fathom	1,025
To 30 fathoms, at \$50 per fathom	1,500

And so on at the rate of \$5 per fathom for each increase in depth of 5 fathoms. At this rate a well of 80 fathoms costs, at \$100 per fathom, \$8,000. These prices include the piping, and the contractor binds himself to finish the work for which he contracted and to deliver a well of the proper depth. If the work is for any cause arrested in one place he must try again until he succeeds. A contractor, however, is anxious to take the boring of wells to a depth of 500 feet for 9,000 rubles (\$5,000). Another has expended more than \$8,000 in boring to a depth of 486 feet. The prices are large and could be greatly reduced by more intelligent labor and management, and it occurred to me that wind-mill power might be used to that end.

The average duration of the work is about four months, but it often takes as long as two years. The cost of the piping is from \$750 to \$1,000 for a well of 500 feet deep.

THE PRESENT YEARLY PRODUCTION.

Herewith will be found a table of exports, No. 1 and 1a, which gives the present yearly production, so far as can be known by the quantity exported.

From what has been said it will at once be seen that any correct statement of the present production of the district is impossible.

Table No. 1 and 1a shows 20,123,093 poods or 2,515,387 barrels of naphtha, if we calculate 3 poods of crude oil for one of petroleum. This is equivalent to 838,463 barrels of refined oil, or about half the capacity of the wells as above stated. With a larger market and better prices for the refined article, the present production could be made to reach perhaps three times the quantity shown by the figures of exportation.

As to the future, with a proper development of the field and with proper facilities for working, there would appear to be no reasonable limit, provided, of course, that the general opinion is correct that the territory lying immediately adjacent to the known territory, and between the points now worked, is also rich in oil.

REFINERIES.

Refineries at present exist in every shape. Four or five excellent establishments are now in operation, and with changes now being made they will soon be complete.

Table No. 4 exhibits the capacity of the 195 refineries now in existence, the number of retorts (504), when constructed, &c. Their capacity was, in 1879, 11,151,000 poods, or about 1,400,000 barrels. This is over half a million barrels more than the quantity exported. The figures also show that the refineries only turned out, in 1879, 475,750; the difference in this and the quantity exported being the stock distilled after the close of navigation in 1878, and remaining on hand from former years. The capacity of the refineries was very largely increased in 1879, but to what extent I could not learn.

One firm with a capacity of 1,000,000 poods, in 1879, distilled but 375,000 poods and now increased their capacity to 3,000,000 poods. Of this firm I shall speak further on as having provided themselves with superior facilities for transportation.

The capital invested in refineries is now not far from \$15,000,000, and the amount is being rapidly increased. On every hand improvements are being made, and the capacity of these establishments will in a short time be perhaps doubled. They work about seven months in the year, in consequence of the limited demand from the country which they can supply and the closing of navigation of the Volga, which is their only outlet. The river is closed generally four months.

CRUDE OIL AT THE WELLS.

The crude oil sells now at the wells for $1\frac{1}{2}$ kopecks the pood, equal to 6 cents the barrel. Ten years ago it sold for 30 kopecks the pood, and as late as 1873 for 20 kopecks. In 1875 it fell to 10 and 8. From that time to the present it gradually declined to the present prices. It is now so cheap that the city government finds it costs less than water

with which to water the street, although the sea water may be had for the hauling. It lasts upon the streets from three to four days, making a perfectly compact and solid pavement of oily sand. These low prices have caused many well-owners to suspend operations in the wells already made, and to stop the work on those in process of boring, and it seems wonderful that the material can be produced at such a price.

At Balaxame the crude oil varies in gravity from .0850 to .0878. The refiners generally refuse to purchase oil heavier than .0878.

The tables Nos. 3 and 4 show the specific gravity of the various wells, and to these I refer. At Bēbēābāt the oil is of better quality, ranging as low as .0815, and in some few cases refining 50 per cent. of pure oil.

The component parts, as reported, of the best grades are as follows:

	Per cent.
Of petroleum.....	40
Of oil and grease.....	35
Of benzine.....	5
Of refuse.....	20

Of the general quality:

Petroleum.....	30
Oil and grease.....	40
Benzine.....	1
Refuse.....	29

Generally speaking, the percentage of pure oil is from 25 to 35 per cent. But few refiners get more than 40 per cent., and the average may be said to be 30 per cent. Some wells would refine as low as 22 per cent., but these inferior oils are rejected, thus bringing the standard, as shown by the table, to a higher percentage. I refer again to table No. 4.

Refined oil sells at Baku at from 70 to 80 kopecks the pood (\$2.80 to \$3.20 the barrel). The casks cost, as stated below, from \$1.60 to \$2 each.

The ruling prices at present in the markets named are as follows, in barrels:

Tzaritzyn.....	\$3 20 to \$3 60
Nishni Novgorod.....	4 00 to 4 80
Moscow.....	5 20 to 5 60
St. Petersburg.....	6 20 to 6 80

Calculating that the oil refined costs per barrel 18 cents, and that the barrel costs \$2, the margin for refining, transport to refinery, interest on investment, repairs, &c., is not very large, considering the limited quantity that can be sold in the available market.

At the points above named the market is equally bad. The rates of transportation from Baku to the following points are, viz:

To Tzaritzyn, per barrel.....	\$0 88; oil sells.....	\$3 20 to \$3 60
To Nishni Novgorod, per barrel.....	1 28; oil sells.....	4 00 to 4 80
To Moscow, per barrel.....	2 40; oil sells.....	5 20 to 5 60
To St. Petersburg, per barrel.....	3 20; oil sells.....	6 20 to 6 80

To the price at Baku must be added insurance, leakage, and transportation.

In the above calculation three barrels of crude oil are reckoned to one of refined, thus making the cost 18 cents per barrel.

The demand for the refuse portions is very small at Baku, and the price low. The steamers use it for heating purposes, but the commerce of the Caspian is not large, consequently little used. They can also, at the present prices, afford to burn the pure naphtha.

Many of the refiners hope to have a profit from the oil, and are making an effort to that end. Samples of lubricating oil were exhibited which

appeared very good, and worked well for machinery purposes. Works have been constructed at Moscow and other points to engage in the manufacture of this oil, and also for the general business of refining the crude naphtha.

I should have stated in another place that the demand of the country tributary to Baku is something less than a million barrels a year. With near approach to this quantity in production the price would go down to almost nothing, as will be seen is the case at present, when 838,463 barrels are supplied. The whole basin of the Black Sea is closed to them, as, indeed, are Tiflis and the points accessible by rail in the Caucasus. It can readily be seen that the industry must speedily pass into the hands of operators having peculiar facilities.

QUALITY OF THE REFINED OIL.

A large percentage of the present production is of a very low grade. There is no government supervision nor regulation, and each refiner turns out such oil as he pleases.

Many of the small operators are incapable, because of imperfect machinery and want of knowledge of producing good oil. Again, the demand is of such a nature that a large quantity of bad oil is salable. The peasantry prefer that quality because of its cheapness, and a large portion of the demand is from that class of people.

The better establishments turn out good oil. A sample was shown that had been prepared to send to England, which was beautifully clear and white, and as it was for England, was perhaps the best quality produced. It was marked, gravity 420, flushing point 104°, and burning point 110° Fahr.

I have gathered such tables of the analyses and experiments as have been made, and refer thereto, numbers 5, 6, and 7.

PECULIARITIES OF THE SOIL.

The soil is entirely different from that of the United States oil-fields. It consists of clay, sand, shells, cobblestones, and quicksand. The oil is found in all good wells in a rather coarse, loose sand which comes out of the flowing wells in very large quantities. Piles of this sand may be seen around some of the noted wells, many feet high. From small wells it comes out in such quantities as to make the American system of pumping impossible. They pump or hoist the oil by a machine called a shalunka. It is a tube lowered down into the well, which fills through a valve at the bottom and holds from 8 to 20 poods. It is sometimes worked by machinery and steam, but generally by pulleys and horse-power. In some rare cases solid stone is found several feet in thickness, but the general formation is clay, sand, and shells. This territory was formerly beneath the sea, and the formation is the same as is generally seen under such circumstances.

DIFFICULTIES IN OPERATION.

In consequence of the loose shifting nature of the formation, the difficulties are many. The pressure from underneath causes this loose earth to be very unreliable, and causes the loss of many tools and pipes in the wells.

When the drilling is done by the polè-tools the principal difficulty is in enlarging the hole and getting the pipes down to their places. When

a well is started no calculation can be made as to when it may be completed. It may require three months or three years. This trouble exists in the American system, with the additional difficulty of the tools getting fast and thus lost. With the pole-tools it is almost always possible to extricate them.

Then there is the difficulty of procuring any kind of supplies at Baku excepting a few unimportant articles. No timber, such as is necessary for rigging, &c., grows near Baku, but all must be brought from a distance. The principal part comes from Siberia by way of the Kama and Volga Rivers, and, as these streams are frozen many months of the year, a stock must be furnished and kept on hand. Coming from such a distance and requiring transshipment, it costs enormously.

Again, water for boilers is scarce. The Caspian Sea water answers the purpose, but is not satisfactory. Again, the worthless class of laborers is an enormous burden on the industry. The workmen are generally Arab and Persian, and are about as inefficient as they can well be, and, like all Orientals, it seems utterly impossible for them to learn anything new.

But to these difficulties may be added also the inexperience and incapacity of the operators (owners) themselves. Barbers, butchers, bakers, locksmiths, and, as before stated, all classes of people are operating, and most of them have neither skill nor capital. They cannot work their tracts themselves, nor will they allow others to do so.

The probable future of the field will be treated at more length hereafter.

With intelligent labor, proper machinery and appliances, and with experienced direction, there are no difficulties of a very serious nature that cannot be surmounted.

THE COST OF BARRELS.

The timber for barrels is obtained from the rivers Kama, coming down from Siberia, and the Volga, and a small quantity from the coast of the Caspian Sea in Persia.

Two kinds of barrels are used—one a long barrel of about 5 feet, and holding about 90 gallons. The timber for this kind, 5 feet long and 6 inches wide, costs \$60 per M. This makes the cost per gallon about 4 cents. The other barrel half the length, holding about 36 gallons. The timber for this costs \$30 per M. The cost per gallon in this barrel is about 5 cents. The hoop-iron costs, delivered at Baku, from \$90 to \$100 per ton.

As before stated, absolutely nothing of any importance can be bought at Baku, and each operator must order his goods and await their arrival.

It was suggested that an American furnishing house for such articles as are used in the business might make a handsome profit. Pipes, cocks, and many other articles were named as being needed.

MEANS AND COST OF TRANSPORTATION.

The only possible means of transportation available at present to the Baku district is by way of the Caspian Sea. The principal quantity of the product goes by way of the Caspian to the Volga, a small quantity only going south into Persia.

There are several very good lines of steamers navigating the Caspian, as well as innumerable small sailing craft, and competition is large enough to make the prices somewhat reasonable. The distance from

Astrachan, at the mouth of the Volga, to Baku is 560 miles; the time usually three to three and a half days.

Vessels drawing over 7 feet of water cannot pass up to Astrachan, but must discharge their cargoes on lighters at the first point of land, 60 miles below. From this point the barges are towed to Astrachan and there unloaded into the Volga steamers.

From Astrachan the product goes up the river to the various points at which the railways touch the river, to wit: Tzaritzyn, Saratoff, Syzran, Samara, Nishni Novgorod, and Kinishina, and passes into the tributaries of the Volga.

From Nishni Novgorod it goes by rail to Moscow and St. Petersburg, to which point it may also go by canal, there being uninterrupted water communication thence to the Caspian Sea.

As long as water communication is available the movement is possible, but the moment the railways are necessary it is impossible. There is a railway from Tzaritzyn, on the Volga, to Kalatch, on the Don, a distance of 40 miles. Thence to Rostoff and the Sea of Azoff is, by river, about 400 miles. From this point all of the Black Sea markets could be supplied, but the expense by rail is so great that the idea of shipment can not be entertained.

The cost of transportation from Baku to the principal markets has been given under the head of "Refined Oil," and to that I refer.

The duty on petroleum in Russia is 55 kopecks the pood, in gold, equal to \$2.95 per barrel.

With this duty it certainly appears remarkable that the product of the wells at Baku cannot be transported to a larger market than that above mentioned. It finds its way, however, to the interior of the country but in very small quantities.

Quotations of transportation expenses to other points than those above mentioned were not obtainable.

PIPES AND LOCAL TRANSPORTATION.

From the principal field at Balaxame to the refineries near Baku, a distance of about 7 miles, there are now four pipe lines. They are private property, conducting the oil from the tanks near the wells to the refineries. Some of these lines are of 5-inch and others of 3-inch diameter. Other lines are to be placed at once by other establishments.

A railway, with tank cars, runs also from Charney Gorod (Black Town), where the refineries are located, to Saracance, traversing the petroleum fields. The cars are filled by pumps along the route and deposit the oil into tanks near the refineries, to which it is hauled in barrels.

This railway is the property of the Poti-Tiflis Company, which has a concession for thirty years, and is guaranteed 5 per cent. by the government. The company is entitled to charge one-sixteenth of a kopeck (one-thirty-second of a cent) per verst (two-thirds of a mile) per pood of 36 pounds, English, = about 4 cents a barrel.

The work appears to be well performed, but there is a lamentable amount of bad management and arrangement in taking the oil from the railway to the refineries.

TANKAGE.

The amount of tankage has been comparatively limited, but just now the operators are beginning to pay attention to it, and on all sides tanks are being constructed.

Formerly, in consequence of the expensiveness of iron, they resorted to all kinds of expedients, such as masonry tankage in the earth, &c., but all these have proved so unsatisfactory that iron is coming much into use. There are now being erected at Balaxame and at Charney Gorod tanks of enormous size; but the probable capacity it was impossible to learn.

There is no relationship existing between the different operators; each tries to conceal his affairs from his neighbor, and all are silent about what concerns their business.

However, as to tankage, it may be said that, except as storage for the most limited time, it did not exist to any great extent. When several operators were asked what quantity of oil they had on hand in tanks, they replied, "We have plenty of it in the wells, but in tanks none."

WORKMEN.

The labor is generally performed by the Arab natives. They are a small, athletic race of men, and, from report and observation made on the spot, I should say they were a very unsatisfactory dependence. The climate is hot and debilitating, and the work is of a nature that they have not been accustomed to.

From wandering around the steppes, herding their cattle and sheep, and following their camels, to hoisting and hauling heavy tools and machinery, the change is too severe.

In going about from place to place in the petroleum fields, one frequently finds a whole gang of these fellows calmly and peacefully asleep. They are amiable and good-natured, have but few necessities, and appear to be utterly indifferent as to whether they have occupation or not. They live during the summer on watermelons and cucumbers, and can sleep out of doors wherever they happen to find themselves. The demand for labor so far exceeds the supply that they are the absolute dictators, and make their own terms as to wages, holidays, and conditions. They have splendid powers of endurance, but fail utterly and completely in lifting and heavy work. A considerable number of Armenian workmen are there, but they soon descend to the level of their Arab comrades in capacity and usefulness.

The few Swedes, Germans, Russians, &c., that find their way there generally have intelligence enough to rise above the position of common laborers, and have positions as foremen and managers.

There have been, from time to time, a good many American and English experts in the work taken there, but as a general thing they have not been successful in great accomplishments because of the different conditions under which the work is performed, and the almost utter worthlessness of the workmen placed under their charge. They soon became discouraged and hopeless, and find a level with the natives or quit the place in disgust.

It is proper to say, however, that the American foremen who have been there from Pennsylvania have taught those people very much in regard to the business, a fact that is freely acknowledged by operators, managers, and all concerned. The best establishments have now commenced to import workmen from abroad in large numbers to maintain an *esprit de corps* among them; and as the industry passes more and more into strong and capable hands, this will continue until the difficulties of the labor question diminish. Engineers, foremen, and experts of all kinds are now mostly from abroad, England, France, and Germany supplying the greater number, a very small percentage being American.

WAGES.

Experts command, as in every country, large and varied wages, according to circumstances and capacities. From \$1,000 to \$2,500 per year may be quoted.

	Per month.
Mechanical engineers have	\$75 to \$125 00
Foremen and competent drillers	100 to 130 00
Ordinary mechanics	50 to 70 00
Coopers	25 to 35 00
Common workmen:	
In winter	5 50
In summer	6 50
In autumn	10 00

Making the average of the wages of common workmen \$88 per year. They are also housed and fed in addition thereto. These latter items do not add very greatly to the expense, as the housing and feeding are of a very primitive nature.

PRIVATE FACILITIES AND TRANSPORTATION.

Messrs. Noble Brothers are now enlarging and completing with all modern improvements their refinery, which formerly had a capacity of 125,000 barrels. Their establishment will now have a capacity of 400,000 barrels. They have a capital of \$2,500,000 in their business. They have their own pipe-lines to Balaxame, and four tank-steamers on the Caspian, of a capacity of 5,025 barrels each, and pumping-stations, to load and unload them, at Baku and Astrachan. These steamers can, if necessary, make four round trips per month, and carry, during the seven months of open navigation, 420,000 barrels of oil.

The same firm have also, on the Volga, a splendid fleet of tank-barges and powerful tugs, capable of moving the product of their refineries. At Tzaritzyn, and other points of railway junction, they have pumping-stations, and also tank-cars upon the railways to distribute their merchandise along the line thereof.

It will at once be seen that this is to work a great change in the petroleum industry at Baku. Of the 1,000,000 barrels demanded by the Volga markets, this one firm will be able to supply 400,000 barrels at a very much smaller expense than any competitors, inasmuch as its own facilities are complete. They have their own pipes from the field, their own bridge and pumping-station, steamers, barges, tugs, cars, but what is more important than all they have not the expense of barrels, an item of from \$1.60 to \$2 each.

When the merchandise arrives at its destination the item of packages will not be a large one, inasmuch as the barrels may be again and again used. They are never returned empty to Baku as the expense of transportation is too great, in that form, and thus they are a clear loss to the exporter, and of but slight value to the purchaser of the oil.

Other great firms must follow the lead of the Messrs. Noble, and thus the entire industry of Baku must be revolutionized. The small people who have not the capital to procure these enormous facilities must quit distillation, and the owners thereof must take the position of "drawers of oil" for the people who have the means.

If the market is not enlarged the small well-owners will be obliged to quit operations, for the price of the crude article will go so low that they cannot profitably work.

With such facilities as I have mentioned, a few establishments, with so small a market to supply, could force crude oil even below its present

insignificant price of 6 cents per barrel. This, under present circumstances, appears to be the inevitable future of the petroleum industry at Baku.

THE FUTURE UNDER OTHER CIRCUMSTANCES.

But the present circumstances are not to continue. A concession has now been given for the construction of a railway from Baku to Tiflis, a distance of about 360 miles. At Tiflis it will connect with the Poti-Tiflis Railway, now in operation, to which, indeed, the concession is given, and by which the new road is to be built. It is reported that work is actually commenced at four different points on the line.

The distance from Baku to Poti is 800 versts (533 miles). The road is to be completed in three years, from about the 1st of April last, or in April, 1883. The section of the road from Baku to Tiflis will not be difficult of construction, the grades not heavy, and along all the distance there are but two bridges (over the river Kura) to be built. The contracts are already made for these, and large quantities of rails are already arriving at Baku.

The contractors promise to have the line open in eighteen months, and have the right for the following eighteen months to April, 1883, to operate it, and make any tariff they choose.

When the line is finished and turned over the company are entitled to charge for the transportation of petroleum a maximum of one-forty-fifth of a kopeck per pood per verst, equal to 72 cents a barrel, to the seaboard at Poti.

Inasmuch, however, as the harbor at Poti is bad, it is contemplated, and the concession is made, to extend the road to Batoum from Semtradi, a point on the Poti-Tiflis Railroad. From Poti to this point is 60 miles, and from Semtradi to Batoum 120 miles, making the increased length 60 miles to Batoum. The total distance, then, to Batoum from Baku is 593 miles, and by the tariff the cost of transportation would be to Batoum 80 cents per barrel.

At Suraw, a point on the Poti-Tiflis Railway, the road crosses the mountain pass, and the grade is 1 in 22 going toward Tiflis from Poti. Here, for a distance of 30 miles, it is intended to make a pipe line. There is scarcely any doubt that the entire distance from Tiflis to the seaboard will eventually be piped, as the elevation is sufficient to press the liquid to its destination without the aid of pumps.

It is said that a company is formed, has purchased property, and intends to build refineries at Batoum, and to transport the crude oil to that point, as also to Marseilles, for refining, and thus avoid the duty imposed upon petroleum in France. Inasmuch as Batoum has an excellent harbor and is a free port, the scheme will probably be consummated. But the Baku people are mad on the subject of petroleum, and were all the schemes that are discussed reported here this document would have an enormous length.

When the railway to Poti or Batoum is finished it is not likely that transient transportation will be depended upon, as the company would probably have their own steamers, but the present freights from those points to various western ports give a standard by which the probable cost can be calculated.

Freight from Poti and Batoum to—	Per barrel.
Constantinople, about	\$0 25
Marseilles	70
Venice	80
Trieste	80

Freight from Poti and Batoum to—	Per barrel.
Havre	\$1 10
London	1 10
Antwerp	1 10
Rotterdam	1 10
Hamburg	1 10

From this it will be seen that if the present price is maintained at Baku of per barrel, say, \$3, with transportation to Poti and Batoum, say, 80 cents, and to the continental ports at, say, \$1.10, this oil can be sold as far as Hamburg at \$4.90, or at the rate of 14 cents the gallon.

Of course this calculation is based upon very low prices for crude oil and the competition of the Baku-Tiflis Railway, which, in my opinion, will not be permitted to fail.

Should the price of crude oil rise to 5 kopecks the pood, say, to 60 cents the barrel, a price that would make the wells highly remunerative, the petroleum could then go as far as Hamburg and sell at, say, \$6 a barrel, if I do not mistake in my calculations.

If the field at Baku is not ruined by the wasteful exploitation, there will certainly be other and better facilities than those above mentioned for transportation, and the product can and will be delivered even at less price than the above.

A plan has long been discussed for connecting the Azoff Sea with the Caspian, by utilizing the waters of the rivers Terek and Kouban. The project has been pronounced feasible by competent engineers, and is now being considered by the minister of public works, and will shortly be discussed by the imperial council, in order to be sanctioned by the emperor, and, as it would be of great strategic importance, the work will no doubt be authorized to commence next year. In this case there would be water communication from Baku to the Atlantic Ocean, and the products of Baku could be moved at almost a nominal price, as compared with the present and the railroad plan above mentioned.

It is, however, too soon to be greatly alarmed about this latter scheme; for, unless it is prosecuted with more energy than public works generally are in this country, we can well leave any scare for a future generation.

It was my intention to have drawn some conclusions of my own from the facts above stated, but upon reflection I leave that for others more competent. The facts and figures presented will probably enable experts in the trade to form an intelligent opinion of the condition of the industry at Baku.

In a country where no statistics are obtainable, no regulations made or observed, no combination or relationship among the operators, but only the most unreasonable jealousy and distrust, it was naturally most difficult to obtain reliable information.

I met much personal kindness and consideration, but, with rare and much appreciated exceptions, I found but few people of knowledge willing to give information. All were entirely willing to tell what they knew of their neighbors' affairs, but nothing of their own. I have had constant cause to regret my own inexperience in the business, and fear that in consequence thereof I have, perhaps, left unnoticed many vital and important features of the subject which I was commissioned to investigate. Should this be so, and such fact suggested, I might, perhaps, obtain any further information desired.

I am indebted very largely to Mr. J. R. Adams, of Oil City, Pa., who passed one year at Baku, and afterwards a year in the Kouban district in directing the work there, for many valuable hints which enabled me

to make my investigations intelligently in those branches with which he was acquainted.

To Mr. J. J. Jackale, formerly mayor of the town of Baku, and to Mr. Vladimar H. Abramovich, editor of the Journal of Baku, and government inspector of boilers, retorts, &c., I am indebted for many kindnesses and much information.

In connection with this subject, I have the honor also to forward a report of Mr. D. R. Peacock, United States consular agent at Poti, on the petroleum district of Kouban, at the western extremity of the Caucasus, as Baku is at the eastern extremity thereof.

Since the report of Mr. Peacock was made, some promising wells have been bored by the company operating in the Kouban, among others two fountains of considerable capacity.

It is yet too soon to speak with any confidence of the Kouban district, but, as Mr. Peacock shows, the work is being prosecuted with great energy and with much promise of success.

To his report I refer, comprising, as it does, a full account of the Caucasian petroleum industry.

LEANDER E. DYER, *Consul.*

UNITED STATES CONSULATE,
Odessa, Russia, August 10, 1880.

Table exhibiting the space, number of wells, depth, diameter, capacity, and specific gravity of some of the properties at Baku.

Space in square fathoms owned.	Number of wells.	Depth in 7-foot fathoms.	Diameter in inches.	Capacity of pools of 36 pounds.	Specific gravity.
9,000.....	{ 1	58	5½	} Not stated.	} Not stated.
1,060.....	{ 1	34	8		
800.....	{ 1	45	10½	5,000	0.867
	{ 1	45	10½	3,000	0.867
1,500.....	{ 1	34	12	15,000	0.873
	{ 1	34	10½	2,000	0.868
400.....	{ 1	48	13	2,000	0.865
1,900.....	{ 1	23	10	2,000	0.868
180.....	{ 1	29	9½	1,500	0.865
	{ 1	41	8	10,000	0.868
368.....	{ 1	40	8½	25,000	0.868
2,350.....	{ 1	51	8	10,000	0.866
3,810.....	{ 1	45	10½	3,000	0.865
	{ 1	30	8½	15,000	0.866
1,800.....	{ 1	24	12	500	0.850
300.....	{ 1	50	8½	1,000	
300.....	{ 1	25	10½	500	0.862
300.....	{ 1	27	10	1,000	
300.....	{ 1	20	8½	150	0.862
626.....	{ 1	43	8	5,000	0.870
	{ 1	25	8½	1,500	0.880
	{ 1	26½	10½	1,500	0.880
24,000.....	{ 1	38	10½	30,000	0.862
	{ 1	48	10	14,000	0.865
24,000.....	{ 1	27	12	10,000	0.868
	{ 1	27	12	1,500	0.860
24,000.....	{ 1	34	9	10,000	0.868
	{ 1	54	6	6,500	0.866
24,000.....	{ 1	42	9	9,000	0.869
24,000.....	{ 5	15	8½	Each 25	0.780
	{ 1	76	6	300	0.860
23,680.....	{ 1	68	7	550	0.868
	{ 1	30	8	200	0.860
16,800.....	{ 1	87	6		

The table is exhibited for the purpose of showing the different depths, diameters, &c., of the wells as well as to show the extent to which the territory is worked. The wells are taken at random.

Approximate rates of freights (English money) on petroleum from Poti or Batoum to the following ports.

Ports.	In barrels.	In cases.
Constantinople	7s. 6d. per ton of 20 cwt.	5s. per ton of 40 cubic feet.
Marseilles	25s. per ton of 20 cwt.	20s. per ton of 40 cubic feet.
Venice	25s. per ton of 20 cwt.	20s. per ton of 40 cubic feet.
Trieste	25s. per ton of 20 cwt.	20s. per ton of 40 cubic feet.
Havre	30s. per ton of 20 cwt.	25s. per ton of 40 cubic feet.
Rotterdam	30s. per ton of 20 cwt.	25s. per ton of 40 cubic feet.
Antwerp	30s. per ton of 20 cwt.	25s. per ton of 40 cubic feet.
Hamburg	30s. per ton of 20 cwt.	25s. per ton of 40 cubic feet.
London	30s. per ton of 20 cwt.	25s. per ton of 40 cubic feet.

The above rates are only applicable to shipments during spring and summer months; the calculation is also made for considerable quantities. Great preference would be given by ship-owners to Batoum as a port of loading. Poti at all times presents greater difficulties and delays.

Quantities of the various products of crude oil exported from Baku from 1832 to 1879.

Year.	Poods of 36 pounds.	Year.	Poods of 36 pounds.
1832	261,000	1863	340,000
1833	300,000	1864	538,966
1834	346,109	1865	554,291
1835	352,720	1866	691,820
1836	352,862	1867	998,905
1837	344,147	1868	785,764
1838	340,554	1869	1,635,229
1839	358,357	1870	1,704,465
1840	337,010	1871	1,275,981
1841	326,695	1872	1,535,990
1842	329,578	1873	3,400,000
1843	327,167	1874	5,000,000
1844	332,854	1875	3,462,282
1845	316,850	1876	4,853,461
1846	288,113	1877	6,816,971
1847	255,476	1878	9,331,644
1848	327,802	1879	12,541,646
1849	328,280	1880, to June 1	3,586,059
1850 to 1862*	.....	

* Not reported.

This table includes petroleum, crude oil, refuse, oil and grease, and, indeed, all products of naphtha

Quantities of the different products of naphtha exported from Baku from 1875 to June 1, 1880, in poods of 36 pounds.

Articles.	1875.	1876.	1877.	1878.	1879.	To June 1, 1880.
Crude oil	323,851	323,561	177,983	281,423	436,673	61,902
Refined oil	1,990,041	3,325,233	4,594,766	6,254,920	6,562,140	1,494,374
Refuse	1,131,725	1,275,321	2,088,899	3,382,859	5,528,308	2,016,276
Oil and grease	1,077	1,095	.....	306	409	23,503
Asphalt	4,586	13,100	723	9,300	10,491	.....
Kerosine, &c.	11,102	4,151	4,600	3,130	.....	.....

8 poods of 36 pounds to the barrel.

*Experiments of three samples Baku petroleum, at Tiflis, in 1874, by Mr. Goulitchambaroff.**

Samples.	Specific gravity.	Temperature.	Temperature of ignition.
First	0.820.	.....	Ord. temp.
Second	0.823	15 per cent.	82° Celsius.
Third	0.830	15 per cent.	32° Celsius.

* To this gentleman (Mr. Goulitchambaroff, engineer at Baku) the department is indebted for much of the statistics contained in this report.

Results of experiments made at Tiflis, 1875, by commissioners appointed by the Viceroy of Caucasus.

Samples.	Specific gravity.	Ignited at degrees centigrade.
First.....	0.8196	30
Second.....	0.8194	30
Third.....	0.8196	30
Fourth.....	0.8240	34
Fifth.....	0.8176	30
Sixth.....	0.8180	35
Seventh.....	0.8196	30
Eighth.....	0.8180	30

Table descriptive of the refineries, showing quantities in poods of 36 pounds.

Number.	When built.	Number of retorts.	Capacity of each.	Charged with poods.	Times daily.	Specific gravity, per cent.	Per cent. of purity.	Workmen.	Produced, 1878.	Total capacity per year.
1	1865	20		5,095	1-2		35	115	300,000	800,000
2	1865	1	100	90	4	0.825	40	12	Idle	10,000
3	1865	1	130	100	4	0.825	40	12	1,000	18,000
4	1877	12	30	20	4		40	12	1,000	7,500
5	1868	4	100	90	2	0.820	35	4	5,000	20,000
6	1868	2	75	60	3	0.820	35	4	5,000	20,000
7	1871	1	120	80						
8	1879	1	180	100	2	0.825	40	6	3,000	15,000
9	1878	1	80	80	3	0.825	40	40	5,000	10,000
10	1878	3	50	260	2	0.825	40	40	10,000	60,000
11	1878	3	80	65	3	0.820	40	40	7,000	70,000
12	1871	3	50	90	2	0.825	40	40	10,000	40,000
13	1875	6	300	280	1	0.820	35	10	70,000	100,000
14	1868	1	75	60	1	0.820	35	3	Idle	5,000
15	1865	12	100	80	1	0.820	35	5	do	50,000
16	1870	2	140	90	1	0.825	40	3	1,000	5,000
17	1873	2	60	50	1	0.825	40	4	3,000	15,000
18	1878	2	150	120	2	0.825	35	8	20,000	40,000
18	1878	2	100	80	2		35	4	8,000	30,000
19		2	300	400	1	0.825	35	5	8,000	40,000
20		3	100	80	1	0.825	40	4	6,000	15,000
21		4	240	220	1	0.825	35	8	13,000	50,000
22		3	165	140	1	0.825	40	6	Idle	50,000
23		1	75	60	4	0.825	40	2	do	15,000
24		2	240	210	4	0.825	35	4	25,000	40,000
25		1	120	100	4	0.825	35	2	20,000	30,000
26		1	180	160	4	0.825	40	4	30,000	60,000
27		1	200	180	4	0.825	40	4	30,000	60,000
28	1868	1	100	80	3		40	4	5,000	15,000
28	1868	1		160	3				Idle	30,000
28	1868	1		300	3				do	40,000
28	1868	1		70	3				do	30,000
28	1868	1		100	3				do	40,000
29	1867	12	80						do	30,000
30	1867	2	180	160	2	0.825	40	4	30,000	40,000
31		3	100	80	1		40	4	2,000	50,000
32	1867	1	100	80	1		40	4	1,000	15,000

Table descriptive of the refineries, &c.—Continued.

Number.	When built.	Number of retorts:	Capacity of each.	Charged with goods.	Times daily, each.	Specific gravity, per cent.	Per cent. of purity.	Workmen.	Produced, 1878.	Total capacity per year.
33	1867.....	2	100	80	2	.....	40	4	5,000	10,000
34	1867.....	3	200 130 80	180 120 70	3	0.822	35	13	10,000	70,000
35	1867.....	2	250 120	200 120	2	.....	37	5	Idle.....	30,000
36	1877.....	2	350 250	300 200	1	.....	35	12	40,000	100,000
37	1878.....	2	300	300	1	.....	33	8	20,000	60,000
38	1875.....	2	200	180	1	.....	35	5	20,000	50,000
39	1877.....	2	100 120	80 90	.....	.....	.....	.....	Idle.....	28,000
40	1877.....	2	250	200	.....	.....	.....	.....	10,000	50,000
41	1879.....	1	300	240	.....	.....	.....	.....	.....	25,000
42	1877.....	3	300	250	.....	.....	.....	.....	20,000	80,000
43	1878.....	2	600	500	1	.....	10	.....	30,000	70,000
44	1875.....	6	400	350	1	.....	.....	.....	Idle.....	150,000
45	1874.....	3	60	50	2	.....	40	4	20,000	30,000
46	1878.....	1	60	50	2	.....	40	2	Idle.....	4,000
47	1878.....	.....	.....	.....	.....	.....	.....	.....	do	.....
48	.....	2	250	200	2	.....	35	7	30,000	50,000
49	.....	2	50 100	40 80	2	.....	40	3	Idle.....	10,000
50	.....	2	250 75	200 60	2	.....	40	3	do	25,000
51	.....	2	100	80	2	.....	40	3	do	10,000
52	1871.....	2	.....	100	3-4	.....	.....	.....	do	30,000
53	1878.....	2	250	200	1	.....	35	4	.....	25,000
54	1879.....	2	.....	500	.....	.....	.....	.....	.....	100,000
55	.....	2	100	80	2	.....	40	2	Idle.....	10,000
56	.....	1	50	40	2	.....	40	2	do	4,000
57	.....	3	450	400	1	.....	40	5	do	80,000
58	.....	2	160	140	2	.....	40	4	do	20,000
59	1874.....	3	300 250 350	240 200 300	2	.....	35	14	6,000	70,000
60	1874.....	2	350	300	1	.....	35	8	Idle.....	60,000
61	.....	4	.....	240 180 120 100	2	.....	40	14	40,000	100,000
62	1879.....	.....	.....	.....	.....	.....	.....	.....	.....	Unknown.
63	1874.....	2	100	80	2	.....	40	.....	Idle.....	75,000
64	1876.....	3	.....	400 350 300	1	0.820	35	8	70,000	80,000
65	1878.....	3	.....	350	1	.....	35	4	2,000	50,000
66	1878.....	1	300	250	2	.....	.....	.....	Idle.....	30,000
67	1878.....	3	.....	200 150 120	2	.....	40	10	do	85,000
68	1878.....	3	450	400	.....	.....	.....	.....	do	70,000
69	1879.....	15	.....	.....	.....	.....	.....	.....	Unfinished	1,000,000
70	.....	2	150 100	120 80	2	.....	40	4	12,000	30,000
71	.....	.....	.....	.....	.....	.....	.....	.....	Idle.....	.....
72	.....	2	250 150	200 100	2	.....	40	5	do	50,000
73	.....	2	150	115	2	.....	40	5	do	15,000
74	1874.....	2	350	300	1	.....	35	.....	do	80,000
75	.....	3	200	.....	.....	.....	.....	.....	.....	.....
76	1874.....	3	400 400 600	350 350 500	1	.....	40	15	60,000	80,000
77	1874.....	2	250	200	2	.....	40	10	Idle.....	50,000
78	1872.....	4	500 300 100 100	..... ..... ..... .....	1 1 2	.....	35	10	40,000	100,000
79	.....	2	300 150	250 100	2	.....	40	3	Idle.....	40,000
80	1874.....	2	130	100	2	.....	40	3	do	20,000

Table descriptive of the refineries, &c.—Continued.

Number.	When built.	Number of retorts.	Capacity of each.	Charged with pools.	Times daily, each.	Specific gravity, per cent.	Per cent of purity.	Workmen.	Produced, 1872.	Total capacity per year.
81	1872	6		{ Two, 240 Two, 180 Two, 100 }	1		40	15	120,000	150,000
82		1	240		2		40	2	3,000	8,000
83		3	130		3		40	2	Idle	20,000
84	1873	6		{ Four, 100 One, 200 }	2		40	12	do	180,000
85		2	125		2		40	4	30,000	50,000
86		1							Idle	
87		1							do	
88	1878	3	{ 250 200 200 }		2		40	4	do	40,000
89	1873	3	{ Two, 300 One, 75 }		1		40	8	30,000	50,000
90	1874	2	275	250	2		40	8	40,000	60,000
91	1874	2	200	160	2		40		Idle	20,000
92		1	50	40	2		40		do	10,000
93		1	150	120	2		40	3	do	25,000
94		2	125	100	2		40	3	do	100,000
95	1872	2		200	2				do	15,000
96	1874	2	75	150	2		40		do	15,000
97	1878	2	120	100	2		25		do	20,000
98		1	75	50	2		40	5	1,000	5,000
99		1	100	100	2		40	3	Idle	5,000
100	1874	4	{ Two, 130 350 150 150 }	{ 300 300 120 100 }	2	0.820	35	12	50,000	100,000
101		3	{ Two, 100 150 }	{ 80 100 }	2		40	7	Idle	20,000
102	Building	2	150	140	2	0.825	40	6	10,000	25,000
103		1	250	200	2		40	4	3,000	15,000
104	1874	2	220	200	2		40	4	Idle	25,000
105	1874	2	150	120	2		40	4	do	10,000
106	1874	1	120	100	1		25	3	do	10,000
107	1872	3	300	250	1		25	7	30,000	50,000
108	1874	4	{ Three, 400 150 300 }	{ 380 140 275 }	2		35	10	50,000	80,000
109	1878	2	100	80	2		25	7	10,000	20,000
110	1878	2	230	200	2		25	4	4,000	10,000
111	1877	3	{ 130 75 60 }	{ 120 60 80 }	2		40	8	30,000	40,000
112	1878	3	400	350	1		25	10	Idle	80,000
113	1873	2	100	80	2		40		2,000	10,000
114		3	{ One, 850 Two, 120 100 }	{ 300 100 140 }	2		35	6	Idle	50,000
115		3	{ Two, 150 One, 80 250 }	{ 100 80 200 }	2		35	8	40,000	50,000
116	1872	4	240	200	2		35	10	50,000	100,000
117	1872	2	160	140	3		35	6	55,000	70,000
118	1872	2	70	60						
119	Building	5	150	140	3		35	6	55,000	70,000
120	1873	5	{ Two, 550 One, 420 Two, 150 }	{ 500 280 120 }	1		40	50	120,000	200,000
121		1	75	50	3		35	2	Idle	5,000
122	1878	2	125	100	2		35	5	do	20,000
123		2	70	60	3		35			20,000
124	1872	2	125	100	3		35			20,000
125		2	220	200	1		25	8	30,000	50,000
126	1872	1	300	260	4		40	5	Idle	15,000

Table descriptive of the refineries, &c.—Continued.

Number.	When built.	Number of retorts.	Capacity of each.	Charged with goods.	Times daily, each.	Specific gravity, per cent.	Per cent. of purity.	Workmen.	Produced, 1878.	Total capacity per year.
127	.....	2	150	120	2	.....	35	8	Idle.....	20,000
128	.....	8	150	120	2	.....	35	1	do.....	25,000
129	1877	8	250	200	2	.....	35	18	50,000	150,000
130	1873	5	{ One, 330 Four, 240	{ 300 200	{ 1	.....	35	11	80,000	100,000
131	1878	2	{ 240 100	{ 200 80	{ 1	.....	35	5	50,000	70,000
132	1878	1	240	200	3	.....	40	3	25,000	30,000
133	.....	1	160	140	4	.....	40	5	Idle.....	10,000
134	.....	1	160	140	2	.....	40	5	do.....	10,000
135	Building	.....	.....	.....	.....	.....	.....	.....	.....	.....
136	1878	.....	275	240	1	.....	35	12	30,000	100,000
137	1874	6	{ Two, 550 Two, 450 Two, 350	{ 500 400 300	{ 1	.....	35	18	130,000	150,000
138	1874	6	{ Two, 450 Two, 350 Two, 300	{ 400 300 250	{ 1	.....	35	18	70,000	150,000
139	.....	2	125	100	2	.....	35	3	Idle.....	15,000
140	.....	3	{ 360 150 80	{ 300 140 60	{ 2	{ One, 0.818 Two, 0.833	{ 40	5	do.....	25,000
141	1873	10	1,000	200	9	818.40	32-40	.....	300,000	†1,000,000
142	1874	10	{ Three, 240 Five, 200 Two, 100	{ 200 150 80	{ 1	.....	35	14	Idle.....	150,000
143	1874	6	350	300	1	.....	35	10	do.....	100,000
144	1878	3	{ One, 241 Two, 180	{ 200 150	{ 1	.....	35	5	15,000	60,000
145	.....	2	70	60	.....	.....	.....	.....	Idle.....	20,000
146	1879	2	125	100	.....	.....	.....	.....	Idle.....	20,000
147	1879	5	200	850	.....	.....	.....	.....	.....	70,000
148	1879	1	120	100	.....	.....	.....	.....	Idle.....	8,000
149	1876	5	150	130	2	.....	35	16	40,000	60,000
150	.....	2	300	250	1	.....	35	8	Idle.....	30,000
151	.....	2	60	50	.....	.....	.....	.....	do.....	20,000
152	1878	1	240	200	.....	.....	.....	.....	do.....	8,000
153	.....	1	75	60	4	.....	40	2	do.....	10,000
154	.....	1	150	120	2	.....	40	2	do.....	10,000
155	.....	1	100	80	.....	.....	.....	.....	Idle.....	8,000
156	.....	1	75	60	3	.....	40	.....	do.....	6,000
157	1875	2	70	45	3	.....	35	3	do.....	12,000
158	.....	1	75	60	3	.....	40	2	do.....	10,000
159	1879	2	250	200	.....	.....	.....	.....	do.....	50,000
160	1879	3	125	100	.....	.....	.....	.....	do.....	50,000
161	1879	3	120	100	.....	.....	.....	.....	do.....	30,000
162	1879	2	{ 50 100	{ 40 80	{ 1	.....	.....	7	do.....	25,000
163	.....	1	120	100	2	.....	40	2	do.....	10,000
164	.....	1	60	40	.....	.....	40	1	do.....	1,000
165	1879	2	{ 100 75	{ 80 60	{ 2	.....	.....	5	do.....	10,000
166	1879	2	340	300	2	.....	.....	.....	do.....	25,000
167	.....	2	75	60	2	.....	35	4	do.....	10,000
168	.....	2	75	60	2	.....	35	4	do.....	15,000
169	1879	2	{ 120 100	{ 100 80	{ 2	.....	.....	10	do.....	40,000
170	.....	1	100	80	2	.....	40	.....	do.....	8,000
171	.....	2	{ 120 50	{ 100 40	{ 2	.....	40	3	5,000	10,000
172	1873	2	450	400	1	.....	35	4	Idle.....	40,000
173	1879	.....	120	100	.....	.....	.....	.....	.....	.....
174	1871	4	{ Two, 200 One, 100 One, 240	{ 200 100 240	{ 2	.....	38	20	106,000	120,000
175	1878	2	350	300	1	.....	30	12	Idle.....	50,000
176	1878	3	400	350	1	.....	35	12	do.....	70,000

* Four years idle.

† Now increased to 8,000,000.

} Building.

Table descriptive of the refineries, &c.—Continued.

Number.	When built.	Number of retorts.	Capacity of each.	Charged with goods.	Times daily, each.	Specific gravity, per cent.	Per cent. of purity.	Workmen.	Produced, 1878.	Total capacity per year.
179	.....	1	200	160	2	.....	35	3	Idle	15,000
180	.....	1	120	100	2	.....	35	3	do	10,000
181	.....	2	120	100	2	.....	35	4	do	20,000
182	.....	1	340	300	1	.....	35	3	do	20,000
183	Building	.....	.....	.....	.....	.....	.....	.....	.....	.....
184	.....	2	75	60	2	.....	35	4	Idle	12,000
185	1878	1	200	180	2	.....	35	5	do	20,000
186	1879	2	.....	200	2	.....	.....	6	do	60,000
187	Building	.....	.....	.....	.....	.....	.....	.....	.....	.....
188	1879	2	600	500	.....	.....	.....	.....	.....	.....
189	Building	.....	.....	.....	.....	.....	.....	.....	.....	.....
190	Building	.....	.....	.....	.....	.....	.....	.....	.....	.....
191	1875	4	{ Two, 350 Two, 180 }	{ 300 150 }	{ 1 1 }	.....	35	15	Idle	70,000
192	1859	30	.....	.....	.....	.....	30	450	600,000	760,000
193	.....	12	.....	2,000	.....	.....	.....	.....	Idle	600,000
194	1876	12	{ Six, 300 Two, 200 Four, 80 }	.....	.....	.....	40	22	240,000	510,000
195	1874	6	.....	1,350	1	.....	40	30	75,000	300,000
195	.....	507	.....	.....	.....	.....	.....	.....	.....	11,151,000

This table is only approximately correct, but an idea may be gained from it of the condition of the industry of Baku. It will be observed that a very large number of the refineries are idle. It also shows a vast number of very small establishments, and also the small amount distilled in comparison with the capacity. It is noteworthy that notwithstanding many works remain idle there are others being constructed of very large capacity.

Experiments at Moscow, 1878.			Comparative experiments with American and Baku petroleum at St. Petersburg, 1878.		
Sample.	Specific gravity.	Ignited at temperature Celsius.	Sample.	Specific gravity.	Ignited at per cent. illuminant.
By Professor Pageshinsky:		0	By Professor Bielstein:		0
First	0.820	43	American, first	0.7787	18
Second	0.819	37	second	0.7817	25
Third	0.820	33	third	0.7834	25
Fourth	0.821	39	fourth	0.7935	16
Fifth	0.814	23	Baku, first	0.8178	17
Sixth	0.818	24	second	0.8210	21
Seventh	0.816	34	By Dr. Beel, 1878:		
Eighth	0.816	11	American, first	0.7960	21
Ninth	0.810	7	second	0.7820	24
			third	0.7890	25
			Baku, first	0.8030	21
			second	0.8170	22
			third	0.8220	24
			fourth	0.8210	20

Certain experiments of Dr. Beel regarding the illuminating power of Baku petroleum as compared with American gave the following results: 4 samples of American gave, respectively, 1,000, 1,074, 1,140, 1,190 units of light; 3 samples of Baku oil gave 1,250, 1,350, and 1,395. As a unit the light of one stearine candle was taken.

Experiments made by Noble Bros., Baku, with the photometer.

Sample.	Specific gravity.	Flushing temperature.	Temperature of ignition.	Per cent. of gasoline.	Normal photogène.	Per cent. of heavy oils.
First	0.810	28	32	6.0	83.6	10.4
Second	0.817	22	24	11.5	73.0	15.5
Third	0.828	30	34	2.6	80.3	17.1

Experiments with burners.

Sample.	Kumburg round burners, 70 millimeters.		Metrallence wick, 5 millimeters circle.		Consumption.	
	Beginning.	Finish.	Beginning.	Finish.	Kumburg.	Metrallence.
First	9.8	9.8	16.8	11.8	40.5	70.0
Second	9.4	9.4	12.9	12.9	38.5	68.5
Third	8.2	7.6	10.6	10.6	39.0	76.0

PETROLEUM DISTRICTS OF THE KOUBAN (CAUCASUS).

REPORT BY MR. PEACOCK, UNITED STATES CONSULAR AGENT AT POTI.

As the petroleum industry has been created and developed in the United States, where at present it involves immense commercial interests, and presuming that carefully-collected data and information respecting this industry in any other part of the world will be of interest, I present my report on the petroleum districts of the Kouban.

Before, however, passing on to a description of the same, including a record of its past and present exploitation, a few preliminary observations as to the area, population, and general conditions of the province of Kouban may perhaps be worth attention.

During the last Russo-Turkish war, while most of the Caucasian native tribes were revolting against established local authorities, and by insurrectionary disturbances retaining from the Turkish frontier a considerable number of Russian troops, the native mountaineers of the Kouban remained strictly loyal and peaceful. Moreover, the Christian inhabitants of the Black Sea district from Novorossisk to Soukum Kala, when compelled by hostile invasions of their country to leave their homes, found not only refuge and protection, but all the necessary means of subsistence, in the quiet and peaceful districts of the Kouban.

In the early part of 1879, at a time of extreme stringency in the European money market, and more especially in regard to any investments in Russia, and particularly in the Caucasus (invaded by the Turks), a considerable capital from abroad was introduced for the purpose of organizing and developing the vast petroleum region of the Kouban.

These two circumstances seem to be of unquestionable interest and importance, in so far as they vindicate the general opinion that in no

other part of the Caucasus is the general welfare of the population equal to that of the Kouban, as demonstrated by its comparatively more consolidated social order and stability.

The second circumstance especially confirms the conviction that abundant riches must be hidden away in that country to have attracted capital and enterprise under conditions so unfavorable.

SITUATION AND AREA.

The province of Kouban is situated in the northwestern part of the Caucasus, and occupies an area of 83,565 square versts (55,710 square miles), covering a fourth part of the total area of the Caucasus. It stretches in a northwesterly direction for about 300 miles along the main Caucasian mountain range from the Elbrooz, 18,523 feet above the level of the sea, to the lowlands and steppes of the Don, the Azof, and the Black Sea at the Straits of Kertch (Enikale).

RIVER BASIN OF THE KOUBAN.

Of the four principal rivers in the Caucasus, the Kouba and the Terek, flowing towards the Caspian, the Rion and the Kouban, flowing towards the Black and the Azof Seas, the latter contains the greatest number of tributaries and gives its name to the country. Fed by the perpetual snows of the Elbrooz, it forms, before falling into the Azof Sea, a wide delta, intersected by numerous lakes.

TOPOGRAPHICAL CONTOUR.

In regard to the great variety of its topographical features the following subdivisions may be named:

1st. The *alpine region*, comprising the summits of the mountain range covered with perpetual snow; inaccessible cliffs and elevations of distorted, irregular forms, partly bare, partly covered with virgin fir forests and pasture lands.

2d. The *highlands and upper valleys* are of a more regular form and sloping all to the north. This division is known for its picturesque scenery and luxuriant vegetation, and shows numerous traces of deserted Caucasian aouls.

3d. The *open rolling, slightly elevated* fertile lands, arable and well adapted to cultivation, come next in order to the above, and slope gradually.

4th. *Vast and expansive bottom lands*, interspersed with swamps and steppes, and descending down to the peninsula of Taman, between the Black and Azof Seas.

This latter forms, owing to its peculiar structure, a separate group of territory, abounding with extinct and eruptive mud volcanoes, still growing and changing form under the influence of subterranean forces.

TEMPERATURE AND CLIMATE.

In consequence of the great diversity of elevation, the snowy, frosty mountain range on one side, the open steppes on the other, and the influence of the never-freezing Black Sea on the west, the temperature greatly changes at various seasons and localities. In the average it is considerably milder than that of the southern provinces of Russia proper.

Occasionally winters have occurred of inordinate stringency, with

snow from 2 to 3 feet deep, and frost at a temperature of 12° to 16° Fahr., which lasts, with some fluctuation, for two or three months. The winter of 1879 and 1880 has been noted for the severity and continuance of its cold.

RAINFALL.

The average yearly rainfall, although great, is less than that of the river basin, where it reaches in some places 67 inches.

No regular meteorological observations have been made in this country either by government or private people.

HEALTH.

In the two upper regions the climate is highly salubrious. In the marshy bottom-lands fever and ague prevail, particularly in the fall of the year. It is, however, far from being so pernicious as that of the low-lands in Trans-Caucasia. The greater part of the peninsula of Taman, where is situated the petroleum region, is noted for its salubrity.

NATURAL CAPABILITIES.

The Kouban comprises vast tracts of extremely fertile, arable, and pasture lands, valuable pine and oak forests, lakes and rivers abounding in fish, productive salt lakes, coal mines, deposits of ozocerite, petroleum, mineral springs, &c. Of the many kinds of game I shall mention only the ibex and the chamos of the mountain region, and the bison in the virgin forests of Teberda, the only place in the Caucasus where this animal has been found.

TRANSPORTATION AND COMMUNICATION.

A considerable surplus of produce is wasted in the interior, and is unmarketable for want of proper transportation. The towns, stanitaz, and aouls are all connected by roads, but they are bad even in dry seasons, and after rain-falls are impassable. The Rostoff-Vladikavkas Railway passes through the northern part of the province, but there is only one macadamized road (16 miles long) open to commercial traffic and leading from Neberdjai to Novorossisk, on the Black Sea.

The many lakes from 6 to 12 feet deep, and the river Kouban for above 150 miles being navigable, it is surprising that water communication has not been made use of to a greater extent than has previously been done. A monopoly of navigation on the Kouban was granted to the "Russian Navigation Company" for six years, and expired in 1876, when the total freight yearly carried by that company's crafts amounted to about 25,000 tons.

At present only one steamer and a few barges, mostly owned by corn merchants, trade on that river.

SHIPPING POINTS.

Taman, Temrouk, and Eisk, administratively forming part of the Kouban, are closed by ice in winter, and do not offer all the facilities required for regular and uninterrupted trade.

Commercially speaking, the real shipping places of the Kouban are Anapa and Novorossisk, both situated on the Black Sea. The latter place is the most important, owing to its nearness to the interior, its

deep sheltered bay extending away inland for a distance of more than five miles, and from 12 to 70 feet deep, and free from any bars or obstructions by river deposits. It is in fact the only sheltered bay on the Caucasian coast of the Black Sea.

A northeast wind called "boro" sometimes blows there with great violence, and has always been considered a most serious drawback and detriment to the place as a port. But as the boro blows from the land, it can at once be seen that it cannot greatly disturb the waters of the bay, and has terrors perhaps more for landsmen than for seafaring people.

POPULATION.

The population of the Kouban, including both sexes, amounts, according to official statistics of 1879, to 862,473. The average population per square mile was 15½ souls. Of the total population, 510,038 belong to the Cossack communities; 108,346 to settlers from Russia proper; 4,281 colonists of foreign extraction; 95,602 native mountaineers; the remainder belonging to sundry classes.

LAND TENURE.

By an imperial ukase of the Empress Catharine II, the Cossacks were the legal owners of all the lands. Since 1864, when the final pacification of the Caucasus was accomplished, large tracts of land have been granted by the present Emperor to officers in compensation for military services rendered in time of war. Other tracts have been allotted to settlers for agricultural purposes, and nearly all the valuable timber lands have been declared to be the property of the Crown.

The lands that remain to the Cossacks are divided into communal and troop lands; the former being the entailed property of the Cossack communes, and the latter owned and controlled by the Cossack military administration of Ekatarinodar.

Each member of a Cossack community is entitled to the right of tilling for his private purposes from 6 to 30 deciatines (15 to 75 acres) of land according to the density of population at the various localities, and has besides the right of usufruct to an indefinite quantity of pasture lands.

TAXES.

Neither Cossacks, natives, nor private owners pay any land tax. The Cossacks are heavily taxed in the way of compulsory military services and the gratuitous discharge of public duties. All roads, bridges, &c., have to be built and kept in repair at their cost and expense. Each stanitsa is obliged to build a school and church, which must be supported also by the Cossacks without any assistance from the imperial government.

The native mountaineers and settlers, who have no military services to perform of a compulsory nature, pay to the Crown a kind of poll-tax of from 3 to 4½ rubles per year. The payment of this small sum is much less burdensome than the duties required from the Cossacks, who are obliged to keep up a military organization of large proportions and furnish an army in time of war, for no compensation except a subsistence and small allowance during the time only of active service.

CENTRAL AND LOCAL ADMINISTRATION.

The Cossack government is represented by the *altmann-in-chief* of all the Kouban Cossacks, who combines civil and military powers. The

town Ekatarinodar, with a population of 38,000, is the center of administration, justice, &c. The Cossack stanitsas and aouls (of the natives) enjoy certain rights of self-government independent of the imperial government, except so far as the officer chosen must be confirmed by the general government. Each community elects, by universal suffrage, its own *altmann*, to represent them in official and local affairs. It has the right to hold meetings to transact commercial business, such as land controversies, &c.

GENERAL PROSPERITY.

Being amply provided with land of extraordinary fertility, the Cossacks are, generally speaking, much better off than the peasants of other parts of Russia proper. In confirmation of this it is only necessary to state that homeless, landless, and poverty-stricken persons are unknown among them. The same is also true regarding the native mountaineers and settlers of foreign origin.

LABOR.

The local demand for labor is generally supplied by the Russian settlers, and not by the Cossacks. According to the locality, the kind of work, the season, wages of common laborers vary from 60 copecks to 1.50 rubles (30 to 75 cents) per day, 12 to 30 rubles (\$6 to \$15) per month, 80 to 150 rubles (\$40 to \$75) per year. During the harvest season these figures are often largely increased. Skilled labor is very scarce, and consequently much dearer, and very often not to be had at all.

Rostoff, on the Don, is the principal labor market, and in case large numbers of hands are wanted that place must be resorted to.

PRODUCTION, INDUSTRY, AND TRADE.

Corn-culture, cattle-breeding, and sheep-farming occupy the bulk of the population, and are the most extensive and productive of all the occupations of the people. Tobacco plantations, fisheries, and exploitation of salt lakes are next in importance. Manufactures and industries requiring technical skill and capital have as yet been but slightly developed. Some distilleries, tanneries, soap-factories, and flour-mills, although of the most primitive kinds, have been profitably established in the vicinity of the principal towns and stanitsas. The exploitation of coal-mines in the upper valley of the Kouban, near Khoumarinsky, Karakentiki, and Makarievsk, supplies the Rostoff and Vladikavkas Railway with the greater part of the fuel consumed by the engines of that line.

The petroleum deposits have only lately engaged the attention of mining engineers and capitalists.

EXPORTS.

The staple articles of export, partly to Russia proper and partly to foreign countries, are wheat, oats, linseed, tobacco, wool, hides, cattle, fish, &c.

IMPORTS.

There is no direct import trade from abroad. Dry goods, hardware, colonial and other goods for local consumption are all imported from Russia proper.

CAPITAL AND ENTERPRISE.

From the above general remarks it will be naturally inferred that the lands of the Kouban possess great natural advantages. The people, however, who own and cultivate these fertile lands have not accumulated any real wealth, nor do they feel much temptation to abandon their present sluggish state of existence.

It must, however, be remembered that only seventeen years ago they were obliged to follow the plow fully armed to protect their lives and property; that they had been, for more than half a century, subjected to hostile raids upon their homes, and had scarcely known the comforts of peace and order, and have only very recently been brought under the benign influence of schools, of roads, and of industrial pursuits. Their economic and social development has, no doubt, been trammelled by many more mighty drawbacks than that of the people of other parts of Russia, and much remains to be done in the improvement of the natural resources of the country by capital and enterprise.

FOREIGN CAPITAL, ETC.

A few foreign capitalists have temporarily tried to prospect the country, but the greater part of them have failed for want of sufficient means, and because of a total ignorance of the local conditions peculiar to the country.

As regards Russian pioneers of trade and industry, the results have been equally disastrous. They have been mostly men without business habits or training, many of them officers embarrassed by debts, or feeling the inconvenience of living on small incomes, or land-owners impoverished by the emancipation of the serfs. With sanguine expectations, but without capital, experience, or labor, and often provided with special facilities and privileges from the government, they have never been able to develop or improve the local industries of the country, as might have been the case had affairs been conducted on sound commercial principles, free competition, untrammelled by official influences, and unassisted by government subsidies.

After this sketch of the general state of affairs in the Kouban, I will now call your attention to a description of its petroleum region, concluding with a record of its past and present exploitation.

SITUATION OF THE PETROLEUM REGION.

The peculiar elevation of the mountain Oshten, in the form of a cupola, 9,000 feet above the level of the sea and formed of calcareous limestone, is one of the last and most conspicuous knobs of, and in connection with, the Central Caucasian Mountain range of a volcanic formation.

Accompanying the investigations of the Geologist Abish, from this elevation to the northwest, a palpable geographical change commences and continues in a northwesterly direction, until the mountain slopes and valleys opening towards the north and gradually decreasing in elevation and increasing in width, lose themselves in the alluvial bottom lands of the Kouban.

It is in this northwestern extremity, of a middle tertiary formation, of the Caucasus, that the petroleum zone of the Kouban, of about 250 miles, is situated. Its numerous synclinal and anticlinal valleys (although far from being of a strictly uniform structure) are coherent so far as their connection with the central range, their common deviation

from that range, and the general dipping of the strata to the north, are taken into consideration.

FORMATION OF STRATA.

The formations met in this region are thick beds of clay, strata of sand and limestone, sea shell and occasionally hard boulders, rock, also layers of Amorphous pebble stone and sulphuric matter.

SUBTERRANEAN AGENCIES.

The primary horizontal position of the various strata of this region has no doubt been greatly disturbed and changed by the influence of powerful subterranean agencies. The still active mud volcanoes of the peninsula of Taman, the frequent and strong outflows of gas in numerous places, and the earthquake felt last year on the 27th of September, on the line of the petroleum zone, for a distance of several hundred miles, amply prove that these agencies have not yet ceased to operate.

INDICATIONS OF SURFACE OIL.

The natural petroleum pits and the numerous indications of surface oil in several valleys have been well known to the natives since time immemorial. They have for a long time collected the oil in sufficient quantities for their own uses. Petroleum naturally issuing from the ground may be seen in some places as high as 880 feet above the level of the sea; notably so near Kourinskaya. In other places it appears in deep valleys; it oozes out of overhanging rocks, it bubbles with gas out of the waters, covers the surface of lakes and streams with rainbow-colored glassy streaks, and streams out with an earthy liquid and gas from an unknown depth by eruptive mud volcanoes. Thick layers of clay and outcroppings of sandstone and calcareous shell, 12 to 35 feet thick, are saturated with it.

Some valleys like the Kiplatchaya and the Psiph have regular terraces of an asphaltic nature, the substance of which is like paste, with a strong smell of petroleum.

All these numerous indications of surface oil are in connection with outflows of gas, and the conformation and nature of the oil-bearing strata, in this locality, can but lead to the supposition that vast petroleum deposits must be hidden there in the bowels of the earth.

THE AXIS OF THE PETROLEUM ZONE.

Although apparently interrupted at several places the Kouban petroleum zone does not materially deviate from its main axis running from southeast to northwest 30°.

SUBDIVISIONS OF THE ZONE.

In accordance with the comparative numbers of natural pits, at various places, which have more frequently attracted the attention of geologists and mining engineers, the zone may be said to comprise six groups, which, however, until further investigations and trial borings may prove to the contrary, must be considered geographically, and not geologically, separated from each other.

FIRST GROUP.

Commencing about 22 miles north-northwest from the mountain Oshten and continuing in a northwesterly direction, the first group

will be the Pshekha-Psish, about 20 miles long. It is the most elevated and stretches from the valley Pshekha to the left bank of the river Psish. It comprises the valley of the Tchekokh-Tanko, the Stanitsa-Khodajin-Skaya, with rich deposits of ozocerite in close vicinity, and the Stanitsa Nephtanaya (meaning in Russian "petroleum village"), so called because of numerous natural petroleum pits in the vicinity.

SECOND GROUP.

About 23 miles to the northwest is situated the Pshaf group, 9 miles long, and occupying the northern slopes and valleys deviating from an isolated mountain range called Pshaf, and feeding several small streams, of which the Loups, Slitch, and Tchibi are the most remarkable, as the rich natural petroleum wells are situated near their courses.

THIRD GROUP.

To the northwest, 16 miles further, commences the Il-Abin group, about 24 miles long, between the valley of the Il and that of the Abin. This group abounds in indications of petroleum in many places. The most numerous are in the valley of the Il and in the secluded valleys of the Guilaya, Kipiatchaya, and Krontaya. There are also natural wells on the banks of the Azip and Abin.

In the Kipiatchaya the ground is of an asphaltic nature in some parts that have been exposed to evaporation for some time. In others it consists of thick layers of sand and sea-shell, richly saturated with petroleum. A few flowing and pumping wells sunk several years ago on the banks of the Il apparently justify the general opinion that this group is perhaps the richest of all the petroleum groups of the Kouban.

FOURTH GROUP.

About 14 miles from the last named commences the fourth group, Getchepsin-Tchekoupse, which is the longest and widest, as well as the most remarkable, owing to a great number of natural wells, and especially so because of a big flowing well sunk in 1866 at Condako, and some very productive pumping wells also in the same locality.

On a line of nearly 30 miles it confines the valleys Koitch, Kondako, Psiph, Nepitel, Khops, Psebeps, and Tchekoupse, also the extinct mud volcano, Shongo.

The Psiph Valley has terraces of asphaltic substance, similar to those of Kipiatchaya of the third group, and according to the investigations of the geologist Abish, the petroleum-bearing strata in this territory are without doubt very rich.

FIFTH GROUP.

The following two western groups, commencing at about 12 miles from the Tchekoupse and the mud volcano, Shongo, conspicuously deviate from the northwestern axis.

The petroleum belt seems to be broken here, and the indications of surface oil are sporadically scattered about in various directions. The fifth group, Ontash-Blagovestchenskaya, to the north of Anapa, has indications of petroleum near the banks of the creek Ontash and in the vicinities of the Stanitsa Blagovestchenskaya and Souvarofskaya. Its length is almost 13 miles.

SIXTH GROUP.

The sixth and last group occupies the peninsula of Taman, and the oil here appears to be diffused in so many different directions and local-

ities that the finding of a regular petroleum line encounters great difficulties.

Surface oil can be seen here on the banks of lakes, in the swamps near the Strelka, along the coast of the Black Sea, the Bay of Taman, and the Sea of Azoff, on the elevations of extinct and eruptive mud volcanoes, and in low open valleys.

PAST EXPLOITATIONS.

The greatest number of trial borings have, in former years, been made by Colonel Novosiltsoff, who was, for more than 12 years, in possession of the monopoly of the petroleum industry in this country. He commenced his operations in the year 1864, when the first well was sunk at Peklo, near the coast of the Black Sea. After many successful and unsuccessful borings in the different groups above named and described, the enterprise became so heavily indebted to the Crown, the Cossack administration, and to private persons, that the central government at St. Petersburg, in order to keep Colonel Novosiltsoff from bankruptcy, placed the petroleum interest under a curatorship, instituted by imperial ukase in 1871.

In recording the results of the past exploitation, comprising a period of thirteen years, from 1864 to 1877, I shall follow the line of the petroleum zone, commencing with the first group.

TRIAL BORINGS.

FIRST GROUP.

Colonel Kraftsoff made several trial borings in the valley of Kontshak (to the depth of 25 feet), about $2\frac{1}{2}$ miles east of the Stanitsa Nephtenaya.

A few wells, about 25 feet deep, were sunk, which yielded several barrels of oil daily. He subsequently sunk a well 122 feet deep in the same valley and several shallow wells in the valley of Tchekokh, of which the deepest, 140 feet, yielded considerable quantities of oil of excellent quality. The work was then stopped for want of instruments and means.

At the instigation of Prince Stcherbatoff, some wells were sunk in the valley of Psish, 350 feet deep, and at Tchekokh to the depth of 105 feet; but these operations were discontinued for lack of means.

A few of the shallow wells near Tchekokh yield now from 4 to 5 barrels of oil per day.

SECOND GROUP.

Trial borings have not been made.

THIRD GROUP.

During the years 1873, 1874, and 1875, Colonel Novosiltsoff sank nine wells in the valley of Il. The deepest was 527 feet. Another was put down to 420 feet, and another to 460 feet. Others were bored, but none of them exceeded 200 feet. The first (527 feet) was, when at a depth of 200 feet, a flowing well for a short time. When deepened to 500 feet it yielded, as a pumping well, about 50 barrels per day. The second yielded about 45 barrels. The third was for a short time a flowing well, the oil rising about 20 feet above the ground.

In the case of the flowing wells, the oil commenced to flow after a layer of sand rock had had some lime passed through; the formation above and lying on the rock being a blue clay strongly impregnated with oil.

Two of these wells now yield by pumping from 5,000 to 6,000 barrels

a year. A few shafts from 30 to 70 feet deep in the Guilaya Balka yielded considerable quantities of excellent lubricating oil.

FOURTH GROUP.

The most eventful trial borings were made at Kandako in 1866. At a depth of only 40 feet from 10 to 12 barrels of oil per day were yielded. At a depth of 123½ feet the first flow of oil appeared and yielded 125 barrels of oil per day, throwing it 14 feet high. The well was mismanaged and choked, and when finally reopened and sunk to 182 feet, a flow of oil rose to 40 feet high and gave 250 barrels per day. It was again choked and finally deepened to 242 feet, when the oil again flowed with great power and violence, yielding several thousand barrels per day, and continuing its spontaneous action for eighteen months.

In sinking this well three petroleum-bearing layers were met, separated from each other by thick layers of sandstone, and in proportion to the depth of boring the volume and force of the flow increased.

Through carelessness or ignorance on the part of the managers, no tankage or reservoirs had been prepared for the oil, which ran away and filled the neighboring swamps and creeks, and was lost to the enterprise.

These pumping wells had also been sunk at Kandako from 200 to 400 feet deep. One of these yields now, at a depth of 343 feet, above 10,000 barrels per year. Near it is built a small refinery with a still capacity of one charge of 10 barrels.

A few trial borings in the valleys of Psiph and Nepitel, parallel to that of Kondako, and of similar formation, showed unmistakable signs of oil of a very light, superior quality. But, as usual, operations were frequently interrupted for want of means and facilities, and finally abandoned altogether. The deepest well was 140 feet.

In the valley of the Tchekonpse three wells were sunk in 1867, to the depth of 300 feet, 700 feet, and 270 feet, respectively. The second of these, 700 feet, gave neither gas nor oil. The other two were, for a short time, flowing wells and gave oil of a light green color.

The Tchekonpse oil is dark and heavy in the upper parts, and of a green color and very light in the lower parts of the valley.

FIFTH GROUP.

Near Anapa two wells were sunk, 170 and 650 feet, without meeting any sign of gas or oil. A well 145 feet near Souvoroupskaya gave light green oil. The quantity of yield has not been recorded.

SIXTH GROUP.

The first borings were made in this group by Colonel Novosiltsoff on the Peninsula of Taman, at Peklo, near the Black Sea, in 1867. The depth of the first well was 50 feet, and it yields, flowing, now small quantities of oil.

Three more wells sunk about the same place, 75 and 75 and 300 feet deep, yielded also small quantities.

Borings were also made at Titoroffka 95 feet deep; at the Strelka, 320 feet deep; at the Borgas, 180 feet; at the Tontau, near the Azof Sea, 300 feet; again at Titoroffka, 260 feet; near the post station Senaya, 180 feet; at Kapontuaya Balka, 300 feet and 470 feet; near the Stanitsa Stablufka, 300 feet.

These wells generally yield some light green oil of a superior quality, from 38° to 46° gravity.

REFINERY AT TAMAN.

In the year 1867 Colonel Novosiltsoff built at Phanagoria, near Taman, a refinery of 10 stills, each of 100 barrels per day capacity, the total working still capacity at one charge being 1,000 barrels. For want of means of storage, and owing to difficulties in transporting the crude oil from the wells, and owing also to other reasons caused by mismanagement, this refinery has remained almost always idle.

RESULTS OF PAST EXPLOITATION.

The exploitation of the industry, under consideration, by Colonel Novosiltsoff, and afterwards under the imperial curatorship mentioned, has, as might be supposed, been anything but a success. This cannot fairly be charged to the want of productiveness of the Kouban districts in petroleum. The remarkable results obtained in the valley of Il, Kondako, and other places, notwithstanding the deficiency of proper means and instruments, gross mismanagement, and other drawbacks, do, it appears to me, quite to the contrary, confirm the conviction that the petroleum deposits in this district must be very vast and rich.

The former exploitation was trammled by so many drawbacks that success was impossible; such as want of capital and proper instruments, and utter ignorance of the business by those who managed it, causing frequent interruptions of work, which damaged and caused the abandonment of even the most productive wells. An absence of reservoirs and tanks wherever oil was found in large quantities, an almost total failure of means of transportation, the simultaneous commencement of borings in many different places to the neglect of deep borings in the most promising localities, all combined to make the enterprise a failure.

It is said, however, that though the principal in the business lost money, the more subordinate agents connected therewith, as well as some usurious officials, did not fare so badly as did Colonel Novosiltsoff, who for more than twelve years controlled the concession of more than 1½ millions of petroleum lands.

I come now to speak of

THE PRESENT EXPLOITATION.

From 1877, when the last Russo-Turkish war broke out, the business in the Kouban was entirely abandoned. In 1879 a new movement was made, and the whole system of operations changed, so far as regards its financial and technical conditions.

TENURE OF LANDS.

Of the six above-mentioned groups, the first only is not yet leased. All mines of this group are the property of the Crown.

The five eastern groups, with the exception of only two valleys (that of Kondako and Psebeys), are now leased by Dr. H. W. C. Tweddle, a citizen of the United States.

KONDAKO.

The valley of Kondako, containing almost 30,000 acres, belongs to Mr. Dourassoff. No boring operations are now being made there. One of the old pumping wells yields, as above stated, above 10,000 barrels

of oil yearly. A portion of this oil is refined at the place, and the remainder sold in its crude state.

PSEBEPS.

This valley, of almost 8,000 deciatines (24,000 acres), has been leased by an English firm, Messrs. Barrow & Co. Last year (1879) they sunk a well 561 feet deep through blue clay, with intermittent layers of lime and sand stone, with now and then big bowlders. At the depth of 350 feet violent outflows of gas caused great difficulty. Large stones and heavy iron rods were thrown out of the well 50 feet above the ground. This well had to be abandoned, and the sinking of another well has been commenced lately near the banks of the Knops.

DR. TWEDDLE'S LEASE.

All the Cossack troop lands situated in the five eastern petroleum groups, and occupying an area of 1,500,000 acres, which formerly formed the concession of Colonel Novosiltsoff, including the Taman refinery and all other property and rights of that former exploitation, have been transferred to Dr. Tweddle, who has the exclusive right for a period of above twelve years.

Dr. Tweddle has also leased four private estates, containing about 90,000 acres, and has the exclusive rights upon them for terms of from twelve to twenty years. This new enterprise was organized last year on a system that has had no precedent in this country, and work will now, perhaps, proceed without interruption, and with economy and energy that will deserve success.

As there are no mechanical works, and as the simplest tools cannot be made or purchased in this locality, all the machinery, boring instruments, tubes, &c., were brought from England and America to Taman, and from thence distributed.

Three skillful English mechanics and six American borers are employed on the works.

The customs duty on machinery being very high, and the difficulty of obtaining new instruments from abroad in case of breakage and damage being considerable, it has been found necessary to build machine-shops and an iron foundry at Phanagoria, near Taman. All these shops are now in working order, and have turned out the necessary implements to prosecute the exploitation. Piers have been built at Taman to facilitate the handling of materials, and also at Akhlanisoffka. A large tank-barge has been built on an improved American system for the purpose of carrying crude oil from Ilsk to the refinery, only a very short distance being required by land transportation. Many tanks for the storage of oil and shanties for the workmen have been built in many localities. These works were prepared before commencing the boring. It would have been a more easy matter in a country where technical means were at hand to assist the workmen, and where an established division of labor and enterprise gave facility to each branch of the industry.

Trial borings were finally commenced at Kaponstnaya Balka, on the peninsula of Taman, and the first well was finished, late in 1879, to a depth of 1,020 feet. It is the deepest well ever put down in the Caucasus, and is cased with 8-inch pipe for 600 feet, and with 6-inch pipe the remainder of its depth.

The ground consisted of one solid bed of blue clay, of which the

greater part was saturated with oil. At a depth of 160 to 200 feet, it gave small quantities of light-green oil, 42° gravity. At a greater depth, the outflow of oil gradually ceased. At present it yields, spontaneously, small quantities of oil.

About 500 yards from the above well an old well was cleared and deepened to 500 feet. This well yields, flowing, several barrels of oil per day.

The oil is 46° gravity, and has the same pea-green color as Pennsylvania oil, and burns, in its crude state, in an ordinary lamp.

A trial boring was commenced on the bank of the lake Akhlanisoffka, near the mountains Bovis and Gleb, where outcroppings of sand and sea-shell strata, from 20 to 35 feet thick and richly saturated with oil, seemed to offer very favorable indications of a petroleum deposit in close proximity.

At the depth of 70 feet abundance of water was found; but the heavy rains of the autumn caused the work to be discontinued temporarily.

At present, borings are being made near the river Ontash, now 260 feet. The formation of blue clay, with occasional layers of sandstone; also pebbles and bowlders.

In the valley of Psiph, 193 feet. At a depth of 27 feet, considerable outflows of gas occurred; and at 124 to 139 feet oil flowed, but in small quantities and of superior light quality.

In the same vicinity another well is being bored, and is now about 90 feet deep.

In the valley of the Kaitkh, 422 feet. The formation is the same as the above. Work is still going on, and no signs of gas or oil have yet appeared.

A new well in the valley of Il is now 410 feet deep. At present (March, 1880) they are boring in a stratum of sandstone, some 15 feet thick. In the same locality a well is now just commenced.

In consequence of the tendency of the ground to fall in, all the above wells have been cased with 8-inch pipe at the commencement, and continued with 6 and 4 inch.

Besides the above-mentioned wells now in progress of operation, various machinery, boring instruments, and timber material for derricks have been prepared and located in the interior of the district for use in 1880, when it is contemplated to bore many wells. Five locomotives and twelve engines are now employed, and five more are on the way from Odessa.

Although the operations commenced in the spring of 1879, boring operations have been possible but for a short period of time. The summer was mostly passed in necessary preparations.

Great delay and expense have been caused by lack of transportation and by the cold and snow of the last winter, which was very severe. At first the headquarters were fixed at Taman, but it was found more convenient to establish them at Novorassist, and they were consequently changed to that point.

GENERAL REMARKS.

The total depths of the new wells lately put down is about 2,900 feet, and it is too soon to make any decisive conclusion as to the prospects of the success or failure of the present enterprise. The expenditure of capital, labor, and energy is enormous, and whether justified by the results or not, time and further expenditure alone can tell. It is certainly too soon to draw any discouraging or disheartening conclusion.

Favorable anticipations in regard to this territory are based upon the following facts:

1st. The northwestern and southeastern extremities of the Caucasus Mountains form two groups in intimate connection with one mountain range, stretching from the Black Sea (the Kouban district) to the Caspian (the Baku petroleum district), where oil is now found.

2d. Numerous indications of surface oil have been known from time immemorial, both at Baku and in the Kouban district. In the latter district surface oil appears in many of the valleys and on the mountain slopes to the north and south of the principal range.

3d. The geological formation of the Kouban is similar to that of the other oil-producing territories.

4th. The results of the trial borings that have been made and are now in progress are also similar.

5th. The yield from the wells was in 1876 and 1877, as recorded, 2,000 barrels per day for about eighteen months, or nearly 1,000,000 barrels of crude oil.

A few pumping wells have continued to produce for the last eight years alone 18,000 barrels yearly, not to mention a considerable production from wells where no record was kept. Operations were also carried on in a very loose and inefficient way.

The total number of wells in the Kouban district now (March, 1880) is, 34, of a total depth of about 11,300 feet, making the average boring per well 332 feet. The average boring per acre is 0.008.

The Baku district yields oil of 22° to 49° gravity, and the Kouban from 21° to 46°.

Many geologists and mining engineers who have made researches in the Kouban entertain highly favorable opinions regarding its future. Among them have been such names as Abish, Colonel Romanoffsky, General Steinmann, and Professor Mendeleef. The district has, however, been so superficially explored that any estimate of its future is only conjecture. Time and adequate means alone will prove its value.

D. R. PEACOCK,
Consular Agent.

UNITED STATES AGENCY,
Poti, Russia, August, 1880.

Since the above report was made by Mr. Peacock I am informed that Dr. Tweddle has found much more oil than above mentioned. Two fountains of considerable, but not large, capacity are working. Where they are I have not learned.

LEANDER E. DYER, *Consul.*

UNITED STATES CONSULATE,
Odessa, Russia, August 10, 1880.

NOTE BY THE DEPARTMENT.—As a further illustration of this question of Russian petroleum in the light of its possible competition with the American article, the following extract, from a report by Consul Du Bois, of Aix la Chapelle, Germany, is herewith given. (For original report, see Secretary's letter, Commercial Relations for 1879, vol. 1, p. 105.)

PETROLEUM—AMERICAN AND RUSSIAN.

We not only help to feed, but we, in a large measure, illuminate Germany. Petroleum bearing the Venango brand, or that hailing from the rich sources of Bradford, can be secured at prices which compare most favorably with the cost of the article in American markets. Every now and then great lumbering dray-carts may be seen

rolling along burdened with heavy casks of our popular illuminator, and often in passing by the depositories of this famous fluid one might imagine himself in the heart of the petroleum region from the fragrance which permeates the surrounding atmosphere.

Recently a new danger has arisen which threatens this important branch of our export trade. The oil produced in Russia is slowly securing favor in the markets of Eastern Germany, and energetic efforts are being made by those interested in the production of Russian petroleum to compete successfully with the American article, and eventually force it from the European markets. While it does not seem possible for the Russian oil to supersede our own, which has secured such a positive footing in the continental markets, still it is evident that our producers will be compelled to divide in a measure this great trade with Russia. How large that division will be, and who secures the largest portion, depends much upon the manner in which the trade is conducted. Our petroleum interests abroad will flourish or deteriorate in accordance with the spirit of integrity manifested by our exporters. So long as some of our refiners continue to extract the illuminating property from the best petroleum to such a degree as to reduce it almost to the grade of third quality, and ship this impoverished material to the foreign markets, they will be open to the serious danger of losing their present hold upon the markets of Europe, thus opening the way for the successful introduction of the Russian product.

THE CONDITION OF THE CROPS IN RUSSIA.

The United States Consul-general at St. Petersburg, in forwarding the following report to the Department of State, under date of August 12, 1880, says:

The minister of the interior having interrogated the governors on the state of the crops throughout Russia, has received the following replies:

[Translation from the Journal de St. Petersburg of August 9, 1880.]

ARCHANGEL.

The weather is fine, with intermittent rains. The grains develop themselves well; the rye grows; the barley fills; good harvests are expected. The hay harvest has been delayed on account of the rain from the 18th-30th July until the 21st July-2d of August. At present it continues with success; there are no injurious insects in the cereals; the hail has caused losses to the amount of 3,600 rubles in the district of Schenk-omsk, and 1,000 rubles in that of Rinega.

PETROZAVODSK.

The weather is fine, and favors the development of the winter grains, as well as those of the spring. The rye, although not thick, has the heads full; and harvests better than last year's are expected. The small grains promise a good harvest. The rains which fell after the 10th-22d July interfered with the hay harvest, which is now half done. The quantity of hay harvested suffices for the local wants.

PERM.

In eight districts the winter grains are satisfactory; in four they are moderate. The small grains are fine in ten districts, and passable in those of Schadrinsk and Irbis.

The forage crops are fine in eleven districts and passable in the twelfth—that of Schadrinsk. The hay harvest, commenced on the 8th—

20th July, still continues. There are no injurious insects. The hail has destroyed 3,500 deciatines of grain, valued at 80,000 rubles. The weather favors the growth of the cereals. Rye meal sells from 65 kopecks to 1 ruble per pood.

WIATKA.

Thanks to the fine weather, the hay has been made everywhere under very favorable conditions. The forage crops have been fine everywhere. The harvest of the winter grains commenced in the second half of July (first half of August), and the result will be passable.

The small grains develop themselves well, and promise good harvests. The grasshoppers, which have shown themselves in the district of Malmyjo, have disappeared without causing loss. The damage caused by hail amounts to 124,850 rubles. The price of a pood of rye meal varies from 85 kopecks to 1 ruble.

WOLOGDA.

The weather favors the growth of the grains. The grass is almost entirely cut. The rye ripens, the small grains grow up vigorously. The harvest will be satisfactory. The forage crops are fine and abundant. Hail has fallen in three districts, but has not caused great loss. Rye meal sells in several districts for 1 ruble and 40 kopecks per pood.

NOVGOROD.

The weather is fine except in the districts of Brovitchi, Oustiong, and Kirilloff, where it rains. The grains, almost everywhere, are moderate. They are bad in the districts of Tikhvine and Kretsy. Harvests are everywhere going on. The small grains are in part moderate and in part bad. The hay harvest still continues. The hail has caused damages estimated at 98,767 rubles. The cecydomia destructor has done some damage. A species of worm which has appeared in the district of Waldai destroys the head of the barley. Measures are adopted for its destruction.

PSKOF.

The grains were only passable until the present; a good harvest of grains is expected, seeing that the rains falling during the flowering season have had a fortunate influence on their development. The harvest of rye will be in part satisfactory, in part passable. The small grains and the flax are fine. The continual rains falling after the commencement of July obstructed the harvesting. The forage crops are moderate; the hail has occasioned losses estimated at 90,000 rubles. There are no injurious insects in the cereals. Rye sells for 13 rubles per chetvert, oats for 5 rubles 50 kopecks per chetvert, and hay for 35 kopecks per pood.

KOSTOMA.

From the news received on the 20th July (August 1) the hay harvest is finished. The rains falling from the 7th-19th July until the 16th-28th July have stopped the work of the fields, but without injury to the forage crops, which are harvested everywhere in sufficient quantities and

NOTE BY THE CONSUL-GENERAL.—Ruble = \$0.56; chetvert = 6 bushels; deciatine = .37 of an acre; pood = 36 pounds.

of good quality. The small grains are revived after the rains and good harvests may be expected. The rye ripens. It is moderate. The hail has caused losses estimated at 40,000 rubles. The price of rye meal is from 90 kopecks to 1 ruble and 25 kopecks per pood.

YAROSLAV.

The winter grains are moderate, the small grains satisfactory, and the forage crops fine. The *Anisoplia austriaca* have appeared in small quantities in two communes of the district of Ribinsk. The hail has destroyed rye valued at the sum of 12,000 rubles. The fine weather favors the grain and hay harvests.

TIVER.

The winter grains are everywhere moderate, the small grains satisfactory, and the forage crops bad, except in the districts of Kaschine and Kalazine, where they are fine. The hay harvest is finished and the grain harvest has commenced. There are no injurious insects. The hail has occasioned losses to the amount of 10,538 rubles in the district of Kalazine, 6,595 rubles in that of Staïetsy, 3,101 rubles in the district of Zoubestew, and 9,675 rubles at Rjew.

MOSCOW.

The warm and dry weather favors the hay and grain harvests. The hay is made; the grain harvest has commenced. The quantity of hay harvested is less than expected. The want of rain has stopped the growth of the forage crops and the small grains. The harvests are, in general, moderate. The hail has caused considerable loss.

WLADIMIR.

The grain harvest has commenced; the harvest will be below the average. The hay is made. It is fine and in sufficient quantities. Injurious insects have appeared in four districts, but without causing much loss. The damage occasioned by the hail is estimated at 90,000 rubles. Rye meal sells from 1 ruble 10 copecks to 1 ruble 30 copecks per pood.

NISHNI NOVGOROD.

The fine weather favors the development of the cereals. The winter grains are already being harvested; satisfactory harvests may be expected. The small grains promise good enough harvests. The forage crops are satisfactory. The losses caused by the hail are as follows: District of Arzomas, 12,000 rubles; district of Ardataw, 28,000 rubles; district of Makariew, 7,000 rubles; district of Nishni Novgorod, 36,000 rubles; and district of Sergatch, 50,000 rubles.

KALONGA.

Except in the districts of Peremsyl, Mestchow, Gizelra, and Kosielsk the weather favors the work in the fields. The winter grains are, in general, satisfactory. The small grains are bad. The presence of injurious insects is not reported. The hail has occasioned losses to the amount of 50,000 rubles. The price of rye meal is from 1 ruble to 1 ruble and 30 copecks per pood, except in the district of Kosulsk, where

it is 1 ruble 50 copecks. A chetvert of oats may be had for 3 rubles 10 copecks to 4 rubles; a pood of hay from 25 to 35 copecks. In general, the prices of agricultural products are much greater than in the past year.

RIAZAN.

The winter grains are satisfactory. The oats are not fine; the other spring cereals suffered from the continual drought. The forage crops are moderate. The damages caused by the *Anisoplia austriaca* in the districts of Rauenbourg and Dankow amount to from 10 to 50 per cent. Upon the advice of Professor Lindemann, the zemstov of Rauenbourg has introduced as an obligatory measure a second tilling of the lands and late seeding. There is still nothing decided in the district of Dankow. In the other districts the anisoplia has caused insignificant losses. The hail has destroyed 40,000 rubles' worth of grain.

TOULA.

The harvests of the grains and the forage crops are made in very favorable conditions. The winter grains are satisfactory in all districts. The small grains have suffered from the drought; the forage crops are fine. The anisoplia has appeared only in the district of Bogoroditsk, and without causing notable losses. The hail has destroyed 20,000 rubles' worth of grain.

OREL.

The harvest has commenced everywhere, but, except in the district of Elets, the rains have stopped the work of the fields. We count upon moderate harvests, both of the winter and spring grains. In three districts we note the presence of the *Cecydomia destructor*. The provincial zemstov prohibit winter seeding before the 15th-27th August. The hail has caused losses exceeding 220,000 rubles. Rye-meal sells from 1 ruble 10 copecks to 1 ruble 50 copecks per pood. New rye costs from 72 to 80 copecks per pood.

TAMBOW.

The harvests of the winter grains are in part satisfactory, in part bad. The small grains are fine. The cecydomia has caused losses considerable enough. The zemstov will deliberate on the 27th July (August 8) upon the measures to be taken against the propagation of injurious insects in the cereals. The hail has occasioned losses to the amount of 300,698 rubles. A pood of rye-meal costs from 80 copecks to 1 ruble 5 copecks.

PENZA.

The rains have delayed the harvests of the grains and of the forage crops. The rye is far from being satisfactory; the small grains are fine; the forage crops moderate.

The cecydomia has caused insignificant losses, but the hail has destroyed grain valued at 433,213 rubles. Rye-meal sells from 90 copecks to 1 ruble 30 copecks per pood.

SAMARA.

The harvests are accomplished under favorable conditions. The grains are bad. From 12 to 24 poods of rye per deciatine have been

realized, and from 4 to 20 of wheat. The forage crops are not fine, either. The small grains can only serve as forage. The flax and potatoes are better since the late rains.

Rye-meal sells for 1 ruble 40 copecks per pood, and that of wheat, 1 ruble 60 copecks.

SARATOW.

The continual rains have stopped the harvesting of the rye. The harvests are generally unsatisfactory. The small grains do not promise a good harvest, either. The hail has destroyed 331,700 rubles' worth of grain. The forage crops are bad. The injurious insects have disappeared since the rains.

VORONEGE.

The winter grains and the small grains are satisfactory, although there are some localities which have suffered from intemperate weather. Harvesting is everywhere in progress. The larvæ of the cecydomia are observed in several districts. The *Anisoplia crucifera* infests almost the entire province; the *Anisoplia austriaca* has appeared only in the district of Voloni. The hail has caused damages to the amount of 240,000 rubles. The fruit and vegetables have suffered on account of the drought, but they are revived lately.

KOURSCK.

The harvest has commenced under favorable conditions. The winter grains are, in general, satisfactory; the small grains and forage crops are moderate. Lately the presence of injurious insects has been noticed, but, as they have appeared late, they will not be able to cause considerable losses. Necessary measures have been taken to destroy them.

SIMBIRSK.

The winter grains are, in general, moderate; the small grains have suffered from drought. The forage crops are good enough. A pood of rye-meal sells from 1 ruble 10 copecks to 1 ruble 30 copecks. The hail has not made great waste.

KAZAN.

The winter grains and the small grains are, in part, moderate, in part, bad. The droughts have arrested the development of the small grains, but recent rains have considerably improved them. The anisoplia has not caused great losses. The prices of the cereals are very high. One pood of rye-meal sells from 95 copecks to 1 ruble 5 copecks; oats, from 57 to 65 copecks, and buckwheat from 1 ruble 50 copecks to 1 ruble 80 copecks.

OUFA.

The winter and spring grains promise a moderate harvest. The harvesting has commenced under favorable conditions. The hays are made; the harvests of the forage crops have been moderate.

OMALISK.

The harvests of the grains are moderate; those of the forage crops very satisfactory. One pood of rye-meal costs 1 ruble 45 copecks; that of flour, 2 rubles.

ORENBURG.

The winter grains and small grains are everywhere satisfactory. The harvest is already begun. The hay harvest is finished and the hays are in sufficient quantity. The grasshoppers have destroyed 477 deciatines of grain, and the hail 375.

TCHERNIGOW.

The hope of excellent harvests has been illusive. In six districts only the grains are satisfactory; in the others they are bad. The work of the fields is frequently interrupted by the rains, which have a bad influence on the quality of the grain. Among the injurious insects, some locusts have appeared in the district of Chigin, and the anisoplia in the district of Kroveletz; but they have not occasioned great losses. The hail has caused considerable devastation.

POLTOVA.

The rains, which have fallen almost without interruption since the commencement of July, have delayed the work of the fields, but since the 20th July (August 1) the weather has been fine. The harvests of the winter grains are in general bad. The small grains are being harvested and good receipts are counted on. The hay has been greatly damaged by the rains. The anisoplia has destroyed much rye, wheat, and barley in all the districts. They cannot yet estimate the losses occasioned by this insect, but if we take into consideration that, in the single district of Mirgorod the anisoplia has destroyed cereals to the value of 480,000 rubles, we can form an idea of the extent of the general losses. In three districts the caterpillars have caused waste in the calza fields; the losses are very considerable. The hail has destroyed cereals of the value of 280,000 rubles. Rye-meal is sold for 1 ruble 20 copecks per poood. One poood of hay costs 50 copecks.

KHARKOW.

The harvests are in general moderate. The anisoplia has devastated ten districts; those of Izioume, Zmiew, and Koupausk have suffered most. The anisoplia was destroyed by hand. The caterpillars infest the beet-fields in four districts. The forage crops are satisfactory. The hail has destroyed 4,000 deciatines of grain. The weather is rainy.

CATHERINOSLAW.

The fine weather favors the work of the fields. The winter grains are already harvested, and the small grains are being harvested. Unfortunately the heads are almost empty, having been consumed by the anisoplia. In many localities the grain has been cut to feed the cattle. The yield of the grain attacked by the anisoplia is only a chetvert per deciatine. In general the harvests are very bad. The anisoplia has disappeared, but there is nothing done to destroy the eggs. The forage crops are satisfactory. In two districts the presence of the caterpillar has been noticed on the flax. The hail has occasioned losses to the amount of 300,000 rubles. The price of rye is very high, ranging from 8 to 12 rubles per chetvert. Wheat costs from 11 to 14 rubles. The inhabit-

ants suffer much on account of the high prices of staples of the first necessity.

KHERSON.

The weather does not delay the work of the fields. The winter grains are gathered and the small grains are being harvested. The harvests are, in general, bad, on account of the anisoplia. The insect has been destroyed by hand and with engines. The losses occasioned by the anisoplia are so great that, in many localities, grain will be wanting even to sow the fields. The forage crops, with a few exceptions, have been bad. The hail has destroyed cereals of the value of 280,000 rubles.

KISCHINEW.

The winter grains and the small grains are, in part, satisfactory, in part bad. The forage crops are passable. The injurious insects have been everywhere seen, without, however, causing notable losses. The hail has caused considerable devastation. The prices of articles of the first necessity are much higher than in the past year.

SIMPHEROPOL.

The weather favors the hay harvest; the forage crops are satisfactory. The cereals have suffered much from the anisoplia, of which 11,200 poods have been destroyed by hand. The price of rye is very high, and there is very little.

ASTRAKAN.

The winter grains are gathered and the small grains are being harvested. The cereals have almost entirely perished on account of the locusts. Only after the small grains are gathered can it be known what to observe respecting the maintenance of the province. The forage crops are in general satisfactory. The hail has occasioned some damage over an extent of 182 deciatines.

JITOMIR.

The weather is very fine and favors the harvesting. The grains are, in general, satisfactory; likewise the forage crops. The hail has destroyed cereals of the value of 450,000 rubles. The price of a chetvert of rye is 9 rubles; that of wheat, 16 rubles.

PODOLIE.

The grains are everywhere satisfactory, but the frequent rains impede the harvesting. The hays are made. The anisoplia has caused insignificant losses in two districts. The hail has caused damages to the amount of 51,000 rubles.

KIEW.

The weather is fine. The winter and spring grains are fine; likewise the forage crops. The presence of the anisoplia has been observed in different localities, but the losses are not great. A reduction in the prices of cereals is expected after the harvest.

WILNA.

The rains prevent the harvesting of the crops, of which the half has been carried away by the overflowing of the water-course. To-day the

weather is fine. Good harvests are counted upon if the work of the fields is not obstructed. The forage crops, however, are bad. The hail has destroyed cereals to the value of 469,968 rubles. One pood of rye costs 32 kopecks.

KOONO.

The harvest of the grains, commenced under favorable conditions, has been arrested during the last three weeks by the continual rains. The hay in the cocks commences to spoil. The winter and spring grains are fine, but the forage crops are much inferior to those of the past year. The potatoes are spoiling in the ground on account of too great humidity. The losses occasioned by the hail are estimated at 390,000 rubles. There are no injurious insects in the cereals.

GRODNO.

The hays are made under favorable conditions, and their quantity will suffice for the local wants. The harvest of the winter grains has been going on since the middle of July (August 1), but the work of the fields has been hindered recently by the frequent rains. Good harvests of the cereals and of potatoes are expected. The hail has caused damage to the amount of 57,673 rubles.

MINSK.

The harvests of the winter grains are very fine, but the rains delay the cutting. The small grains and the forage crops are equally fine. There are no injurious insects. The hail has destroyed 147,698 rubles' worth of grain.

MOHILEW.

The winter grains and the forage crops are moderate. The small grains are satisfactory. The losses caused by the hail amount to 120,000 rubles.

WILETESK.

The winter grains are moderate, except in the districts of Wiletesk and Regitsa, where they are bad. The small grains are bad everywhere. The forage crops are satisfactory. There are no injurious insects.

SMOLENSK.

The rains impede the harvesting of grain and the hay harvest. The winter grains are miserable; the small grains moderate. The losses occasioned by the hail amount to 80,000 rubles. Rye-meal sells for 1 ruble and 20 copecks per pood. A chetvert of oats costs 5 rubles.

ESTHONIA.

The recent rains have had a fatal influence upon the harvest of grains and forage crops. The winter grains are moderate; the small grains bad. The hays are not abundant, but of a superior quality. Neither have injurious insects appeared, nor have serious losses been caused by the hail.

LIVONIA.

The winter grains and oats are very unsatisfactory; the barley and potatoes are less fine. The good weather favors the harvesting. The forage crops are moderate.

COURLAND.

The winter grains are moderate; the small grains and potatoes satisfactory. The hay harvest is accomplished under favorable conditions. The quantity of hay harvested is not considerable, but the forage crops are of a superior quality. The weather favors the work of the fields. There are no injurious insects. The hail has not caused great losses.

WARSAW.

The harvests of the grains and of the hay were made in favorable weather. The recent rains have revived the small grains, which had suffered from a prolonged drought. The rye and wheat are harvested. The spring grains have been cut. The results of the harvests promise to be very satisfactory, with the exception of the barley and buckwheat, which have failed in several places. The forage crops are fine. Eighteen rubles are paid for a chetvert of wheat and 14 rubles for a chetvert of rye.

SUWALKI.

The rains, which have fallen since the commencement of July, delay the harvests, which will be moderate. The hay is of a good quality, but there is less than during the past year. The hail has made ravages, considerable enough, in the grain and vegetables.

SIEDLCE.

The winter grains are harvested, and the small grains are being harvested. The fine weather favors the work. The harvests of the winter grains are very satisfactory; the wheat is finer than the rye. The spring grains are moderate. The hay harvest is finished in fine condition; but they have harvested less hay than during the past year. There are no injurious insects nor losses caused by the hail.

PLOCK.

The winter wheat is fine; the rye moderate. The small grains and vegetables promise to be fine. The hay harvest is accomplished; the results are moderate. The hail has occasioned considerable losses.

PIOTRKOW.

The rye is harvested; the wheat, barley, and oats are being harvested. The rains, which impeded the harvesting, revived the small grains, the development of which has been arrested by long droughts. In general, the results of the harvests will be moderate.

LUBLIN.

The fine weather of the spring and the commencement of the summer, with intermittent rains, have favored the development of the cereals. The hay harvest was finished in the month of June. The rye has given moderate harvests; the wheat and small grains, on the contrary, are very fine. If the harvesting of the small grains and the gathering of the potatoes occur under favorable conditions, this year will have to be considered as one of the best. Injurious insects have nowhere been observed. The hail has destroyed 100,000 rubles' worth of grain.

RADOM.

The harvests are satisfactory. The hay harvest is finished under favorable conditions; but there is less of the forage crop than in the past year.

KALISZ.

The winter and spring grains are fine. The wheat has been cut since the middle of June.

KIELCE.

The rye, oats, and barley have been harvested under very favorable conditions. All the grains have succeeded. The harvests of wheat and millet are good. The forage crops, inferior in quantity, are superior in quality to those of last year. The hail has caused losses amounting to 39,572 rubles.

LOMJA.

The harvests of the winter and small grains are very fine and are made under favorable conditions. There have been no injurious insects. Good harvests of potatoes are counted upon.

THE GRAIN BEETLE, AND HOW TO DESTROY IT.

REPORT, TRANSLATED FROM THE RUSSIAN AND TRANSMITTED TO THE DEPARTMENT OF STATE, BY CONSUL-GENERAL EDWARDS, OF ST. PETERSBURG.

THE GRAIN BEETLE, AND THE MEANS TO DESTROY IT.

Latterly, in many governments of Southern Russia, great ravages have been caused in the grain-fields by an insect called the grain beetle ("kouzka," or krassaum).

The grain beetle (*Anisoplia austriaca*) attains the length of one-half to three-quarters of an inch. The body of the beetle is thick, and of a dark green color, with reddish upper wings, with a black, square spot on the top. The male beetles have only a very small spot or none. The under part of the body is thickly covered with gray hairs. The legs are black. Similar beetles can be distinguished from the "kouzka" by a cross on the back, on account of which they are called cross-bearers. They are a little shorter than the other, and less destructive to the grain than the "kouzka."

The time of incubation to the time of their coming out of the grub is two years.

It has been noticed that in most instances the beetle appears in the greatest quantities in the even years.

The grain beetle "kouzka" appears on the fields in the greatest numbers about the middle of June, and attacks at first rye and winter wheat, and afterwards passes to the summer wheat. In the day time they sit on the head of the grain, but in the evening they go down to the ground. In the hot days they fly over from one place to another, but in dull weather, and likewise when there is much wind or rain, they are rather dormant. They lay eggs generally at the end of June, burying themselves in the soft and ploughed-up earth at a depth of 2 to 6 inches, leaving in the holes about twenty-four small eggs, which are like small white peas, of the size of a millet-seed. In two and one-half or three

weeks after the laying of the eggs the worm appears. The full-grown worm is represented in the form of a bow with three pairs of long legs, with a large, light-red head. The worm is of a whitish color; on the blackish back end of the body there is an opening like a diagonal crevice, but it is not triangular like the June worms. A fully grown worm is a little shorter in length than nine-tenths of an inch. For the most part, the worms are found in the fields which were under summer wheat. Generally more worms are found on the edges of a field than in the middle.

The worms of the grain beetle live in the ground for about two years at the depth of 1½ to 8 inches, depending on the degree of dryness of the ground. In the winter, when there is a hoar frost, they go down deeper than eight inches, but in the spring they come up to the surface of the ground, and about the middle of May they turn into grubs. After two and one-half or three weeks the beetle comes out of the grub. The best means for destroying the grain beetle, or "kouzka," is to destroy the eggs, worms, and grubs.

1. For the destruction of the eggs, soon after the grain mostly attacked by the beetle has been removed, and particularly on fields of summer wheat, the fields should be plowed up to the depth of 6 inches, so that by turning over the ground the eggs get destroyed by the sun, wind, and rain.

2. For the destruction of the worms it is best to plow the fields in the autumn a year after a great quantity of beetles has appeared. Those fields that have been in summer wheat should be plowed to a depth of 8 inches; when the worms are turned out of the ground they should be gathered up with the hands. In this way a great many worms are destroyed by birds, trodden down by the feet of the cattle, and destroyed by inclement weather. The worms should also be gathered by the hands at the plowing of the ground in the spring, after a great number of beetles has appeared.

3. For the destruction of the grubs it is best to plow up the fields in the middle of May to a depth of 7 inches and then to harrow the ground often, and especially such as has been in summer wheat a year after a great quantity of "kouzka" has appeared. For instance, if the kouzka have appeared in the present year, 1880, they should be plowed for their destruction in the middle of May, 1882, particularly at the edges of the fields. The belt of plowed-up land should be 200 feet in width. If several fields have been sown with the same seed the belts should be as far away as possible from old fields. For this reason it is useful to unite all the fields sown with the same seed in one lot, in order to shorten the work.

In addition to the above it is important, in order to get rid of the kouzka in the future, to observe, as far as possible, the following rules:

1. To sow such descriptions of wheat and barley as mature early, so that the beetle may be prevented from finding its proper food when it appears, and generally to sow as early as possible.

2. To sow winter wheat instead of summer wheat.

3. To sow such grain as the beetle does not eat; for instance, maize, millet, oats, and buckwheat.

4. To sow, besides the grains above enumerated, grains that produce oil, linseed, winter cresses, &c., especially during those years in which great numbers of beetles are expected.

5. To take away the different weeds from the pathways and other places which contain a great many insects. It is no use driving them

away by means of cords, smoke, or other means, as the beetle deposits its eggs in other places, which make it very difficult to destroy them.

W. H. EDWARDS,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
St. Petersburg, Russia, July 13, 1880.

INSECT PLAGUE IN SOUTHERN RUSSIA.

REPORT BY CONSUL-GENERAL EDWARDS, OF ST. PETERSBURG.

I have the honor to report that reliable news from the southeast of Russia, from the Caucasus and from other regions of the empire, more than confirm the most serious apprehensions entertained here in relation to the spread of the insect plague.

In no instance have the united actions of the local authorities been able to eradicate or stay the wandering progress of this most disastrous and unwelcome scourge.

Crops that promised highly favorable results are now threatened with total devastation.

Notwithstanding the extraordinary and energetic measures undertaken by the local authorities in those neighborhoods and regions considered the immediate and actual locust-developing regions, and where, more especially of later years, these devouring pests have scattered destruction far and wide, their growth and development have increased at a wonderful rate. For several years they have appeared again and again further inland and in new regions.

Districts formerly comparatively free from their annual visits are now swarmed, and the crops considered lost.

Stringent measures have been adopted by the local and government authorities in the newly-invaded districts in order to prevent such a calamity, and it remains to be seen whether their united efforts will be crowned with success.

Thousands of soldiers are now assisting those hamlets and villages where there is a deficiency of hands.

The work of killing the insects is compulsory, and the peasants are said to avoid it for different reasons. In some districts the reason assigned is want of pay; in others they cut the grass, and refuse to listen to the voice or instructions of those appointed to protect their interests, and cry, "Summon us, sue us; we will not reap the grain. 'Tis the resentment of God. Let us cut our hay, so that at least our cattle be not without fodder."

From the latest trustworthy information it appears that the *Anisoplia Austriaca* have invaded the government of Charkaff. This bug is not less to be feared than the dreaded locust, and the present surprising and prolific development of this bug only proves the fears expressed by last year's warnings, when ineffectual endeavors were made to eradicate their future development, that climatic influences would not tend to their destruction. All former attempts to destroy them have had no other than a slight local influence.

The hail has destroyed thousands of acres of grain in the government of Kazan, and the seed has perished from the drought in several districts of the government of Simbirsk.

For the past ten years there has been no progress in the agriculture

of this country, the quantity of grain produced in 1879 being no greater than that produced in 1870.

The extent and dimensions of the losses caused by the hail, drought, and insect plague are as yet unknown, but it is safe to say that the prospects are far more discouraging than they have been for many years.

The agricultural affairs of this country, even when considered under the most favored circumstances, appear to be in a stagnant and lamentable condition.

W. H. EDWARDS,
Consul-General.

UNITED STATES CONSULATE,
St. Petersburg, Russia, July 6, 1880.

MODIFICATION OF THE METAL TARIFF OF RUSSIA.

REPORT BY CONSUL-GENERAL EDWARDS, OF ST. PETERSBURG.

I have the honor to herewith inclose a translation of an officially published copy of the opinion of the Imperial Council, confirmed by the Emperor on the 3d-15th June, 1880, respecting the free importation into Russia of cast and wrought iron, and the alteration of the rates of customs duties on iron and steel, metallic manufactures, and machinery.

I beg to invite your attention especially to the following provision:

I. The privilege of free importation from abroad of cast and wrought iron for manufacture of machinery, imperially sanctioned in 1861, is to be withdrawn.

Manufacturers of machinery employing steam or water power have hitherto had the right, with the permission of the minister of finance, of importing cast and wrought iron free of duty, in such quantities as were required for the manufacture and fitting of machinery at their respective works. The abuse of this privilege is said to have been the cause of the abolition of the exemption. Hitherto there existed two species of privilege in regard to the importation of unwrought metals; one made the duty payable in paper money, the other entirely exempted the importation from duty. The duty collected in gold from the importation of metals during the year 1878 amounted to the sum of \$5,000,000; the duty collected in paper money during the same year amounted to \$1,200,000, and the exemptions during the same period amounted to \$1,900,000. It will be seen, therefore, that it is expected to realize at least \$2,000,000 per annum by the revocation of the exemption privilege.

By an examination of the new and old scale, it will be observed that steel and iron are put in the same category. The modifications beyond those above mentioned are unimportant.

Agricultural implements without steam-engines, not specially mentioned, are free as before. Those specially mentioned are scythes, sickles, chaff-cutters and mowers, shears for sheep-shearing, spades, shovels, rakes, hoes, and forks, upon which there is a duty of 38 cents per pood (36 pounds), being an increase of 5 cents per pound over the old tariff.

The value of the merchandise imported into Russia during the year 1870 amounted to \$168,000,000; during the year 1879 the importations were valued at \$298,000,000. In these figures are included the products free from duty, valued at \$31,500,000 in 1870, and \$72,000,000 in 1879.

The customs receipts from the different species of merchandise have increased during the past ten years in the following proportions: Tea,

56 per cent.; the wrought metals, 316 per cent.; salt, 16 per cent.; cotton yarn, 326 per cent.; ordinary oil, 30 per cent.; wool, 64 per cent.; tobacco, 51 per cent.

Two important articles show a diminution during the same period: silk, 66 per cent., and cotton goods, 14 per cent. The general increase of customs duties during the ten years from 1870 to 1879 has been 52 per cent. The customs revenue for 1879 amounted to \$45,750,000, an excess of \$7,500,000 beyond the provisions of the budget, and \$3,000,000 beyond the receipts of the preceding year. The increase during the past ten years cannot be attributed solely to the increase in the quantity of the merchandise imported. By the decree which went into operation January 1, 1877, all duties were made payable in gold.

Gold coupons must be bought by Russian importers to meet the duties on their goods, except in special cases where the government allows the importer to pay in paper money. This change of the standard from paper to gold for duties advanced the rates by about 50 per cent.

The Russian paper ruble is the only current money in use in the trade or commercial transactions of the empire, and has a daily fluctuating value. It is impossible, therefore, for an importer to foretell what amount of duty he must pay. The following are the principal articles from which the customs receipts were realized during the year 1879:

Tea.....	\$12,000,000
Unwrought metals.....	4,500,000
Salt.....	2,900,000
Strong drinks.....	2,500,000
Cotton yarn.....	2,300,000
Oil.....	2,000,000
Woolen tissues.....	2,000,000
Raw cotton.....	1,500,000
Metallic products.....	1,500,000
Wool.....	1,200,000
Tobacco.....	1,000,000
Fruits.....	1,000,000
Cotton tissues.....	1,000,000
Cloth.....	700,000
Oil for lighting.....	700,000
Silk tissues.....	500,000
Other merchandise.....	8,750,000

The different products pay as follows in proportion to their value:

	Per cent.
Salt.....	60
Tea.....	32
Drinks.....	25
Silks.....	25
Tobacco.....	24
Cotton yarn.....	21
Woolen yarn.....	21
Ordinary oil.....	17
Petroleum.....	15
Unwrought metals.....	15
Fruits.....	14
Coffee.....	11
Flax yarn.....	10
Fish.....	9
Wrought metals.....	9
Cotton goods.....	9
Woolen stuffs.....	6
Mixed goods.....	5
Furs.....	5
Watches.....	3
Railway carriages.....	3
Machines and apparatus.....	2

The right to import articles free of duty is granted to a great number of persons.

During the year 1878 the exemptions of dutiable articles amounted to \$4,500,000, equivalent to one-tenth of the entire customs receipts. From the above table it will be seen that salt and tea, articles of necessity, pay much more revenue in proportion to their value than silks, watches, and other articles of luxury. The same principle may be applied to the metals. Unwrought metals pay one and one-half times more duty in proportion to their value than wrought metals, and five times more than machinery, without taking into consideration those that are exempt from all duty. The partiality and injustice of forcing the poorer classes to conform strictly to the law, while permitting a privileged class to escape the payment of duties, are plain to every candid mind, especially when we consider that the purchases by the former class consist of the necessities of life, and that most of the purchases of the latter class consist of the luxuries.

The great defect in the Russian tariff system consists in the fact that it is not designed to protect the interests or bring into favorable action the resources of the empire.

The leading object seems to be the increase of the revenue, without regard to the general prosperity of the empire. The privileged classes revel in their luxury, and the poor industrial classes wallow in their destitution. Of the principal customs cities of the empire, Moscow stands at the head and shows the receipt of \$8,750,000 for the year 1879 against \$4,700,000 in 1870. St. Petersburg is second with \$4,800,000 against \$5,500,000 in 1870. The city of Reval occupies the third place with \$2,750,000 against \$200,000 in 1870. The Baltic Railway is the principal cause of the great progress made by Reval.

The increase of receipts for 1879 is 50 per cent. greater than 1878. Odessa is fourth, with \$2,500,000 against \$2,000,000 in 1870. Riga is fifth, with \$1,850,000 against \$1,350,000 in 1870. Accompanying this is an officially published copy of the new metal tariff.

W. H. EDWARDS,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
St. Petersburg, Russia, July 20, 1880.

ALTERATIONS IN THE RUSSIAN TARIFF.

Opinion of the Imperial Council, confirmed by the Emperor on the 3d-15th June, 1880, respecting the free importation into Russia of cast and wrought iron, and the alteration of the rates of customs duties on iron and steel, metallic manufactures, and machinery.

[Translation from the Russian.]

I. The privilege of free importation from abroad of cast and wrought iron for manufactures of machinery, imperially sanctioned in 1861, is to be withdrawn.

II. The proposed alterations in the existing customs tariff are to be submitted to His Imperial Majesty for confirmation.

III. The above measures indicated in paragraphs I and II to take effect from the 1st-13th January, 1881.

Alterations in the customs duties for European trade.

ARTICLE 34. Shears for sheep-shearing and for napping, to be excluded from the tariff.

ARTICLE 35, PARAGRAPH I. Agricultural machinery and implements, without steam engines, not specially mentioned, free.

REMARKS.—Duplicate parts of the above-mentioned machinery, imported together with it, are admitted free; parts of machinery brought separately pay duty accordingly to corresponding paragraphs of tariff.

ARTICLE 35, PARAGRAPH II. Machinery for dressing various fibrous substances, such as working machinery, unreeling, breaking, carding, bating, spinning, warping, weaving, napping and nap-shearing machinery; also machinery and apparatus for paper making and printing, and IV weaving reeds of every kind, also dents and rods for making the same; rods and shuttles for weaving-frames, steel and iron teeth for heckles; heckles for flax and hemp and cards of every kind, free. Obs. 1. Duplicate parts of the above-mentioned machinery and apparatus and also the indispensable fittings thereof, imported together with them, are admitted free. Those imported separately from machinery and apparatus pay 30 copecks per pood. Obs. 2. Such articles as do not form a direct and immediate part of machinery, &c., but are used in setting it up or in connecting it with other machinery or apparatus, such as railings, stair-cases, gearing or shafting, pulleys, driving straps, cards for spinning machinery, connecting pipes, oil-cups, and metallic webs, to be excluded from the tariff.

ARTICLE 36. Sea and river going vessels of every description, entire and with fittings, free.

REMARKS.—Iron vessels, with steam engines or without, brought in separate parts, pay duty according to corresponding paragraphs of tariff.

Description.	New scale.	Old scale.
	Per pood.	Per pood.
ARTICLE 95.—Iron:		
I. Bars, assorted and rolled of all kinds, measuring $\frac{1}{4}$ to 18 inches in width and up to 17 inches in thickness in diameter, and also in puddling and mill bars	\$0 26	\$0 26
REMARKS.—Iron under $\frac{1}{4}$ inch in thickness or width is regarded as wire.		
II. Iron rails	34	15
III. Iron in sheets and slabs not exceeding 18 inches in width, and all kinds of assorted iron exceeding 7 inches in width or diameter	37	37
IV. Scrap-iron	15	4
OBSERVATIONS TO PARAGRAPH 95.—(Manufacturers of machinery employing steam or water power may, with the permission of the minister of finance, import cast and wrought iron free of duty in such quantities as may be required for the manufacture and fitting of machinery at their respective works) to be excluded from tariff.		
ARTICLE 96.—Tin in sheets not lacquered and all kinds of sheet-iron, painted, covered with zinc, copper, or other metal	96	96
ARTICLE 97.—Steel:		
I. In bars and assorted from $\frac{1}{4}$ to 18 inches wide, and all assorted steel exceeding 7 inches in diameter or thickness, and also in plates	26	61
OBSERVATION.—Steel in thickness, breadth, or diameter under $\frac{1}{4}$ inch is regarded as wire.		
II. Steel rails	34	34
III. In sheets and plates exceeding 18 inches in breadth, and all kinds of assorted steel exceeding 7 inches in thickness or diameter	37	61
ARTICLE 102.—Cast-iron, wrought:		
I. Iron castings, without any finish, such as fire-bars, plates, pipes, beams, pillars, cast-iron appurtenances for railways, and their rolling-stock	38	38
II. Cast-iron vessels enamelled	61	61
III. Articles of cast-iron, finished, turned, and polished, ground, painted, bronzed, tinned, covered with zinc or other common metals, with wooden, copper, and bronze parts, and without same	77	1 93
OBSERVATION.—All articles of malleable cast-iron are liable to duty under Paragraph 3, Article 102.		
ARTICLE 103.—Iron and steel blacksmiths' work, wrought and cast, without filing or only filed along edges or rims, but not otherwise finished, such as anchors, nails, hooks, bells, mortars, and also all appurtenances of railways and their rolling-stock	61	1 03 to 2 46
ARTICLE 104.—Iron and steel articles, boiler work, such as boilers, reservoirs, tanks, boxes, bridges, pipes, and also all kinds of articles manufactured from sheet-iron and steel, excepting those specified in Article 96 and 106	77	77 to 1 03
ARTICLE 105.—Iron and steel articles, excepting those specially named, finish d, turned, polished, ground, bronzed or otherwise finished with parts of wood, copper, bronze, or without the same, weighing—		
I. More than 5 lbs	77	1 92 to 3 46
II. Less than 5 lbs	1 54	-----
OBSERVATION TO PARAGRAPH 105.—(All articles of blacksmiths' work weighing more than 1 pood each pay duty under Article 104 as blacksmiths' work, viz, 77 cents per pound) to be excluded from tariff.		
ARTICLE 106.—Manufactures of tin-plate:		
I. All articles of tin-plate and all articles of sheet-iron, tinned, enamelled, and covered with zinc or other common metals	1 92	1 92
II. The same articles with gilding, painting, or other ornaments	3 84	3 84

Description.	New scale.	Old scale.
	<i>Per good.</i>	<i>Per good.</i>
ARTICLE 167.—Wire:		
I. Iron and steel	0 77	\$1 15
II. Of copper, brass, and other metallic fusions, as also all wire tinned, covered with zinc or with other common metal, except the wire mentioned in article 168, nails and wire rivets, pegs for piano-fortes, metallic wires, together with the weight of the reels on which they are wound; also wire cables, rigging, and submarine cables of wire	1 15	1 15
ARTICLE 168.—All manufactures of wire, as also wire covered with paper, silk, silk thread, and frames for umbrellas or parasols, and bird-cages of all kinds of wire	1 92	2 31
ARTICLE 172.—Scythes and sickles, chaff-cutters and mowers, shears for sheep-shearing, apades, shovels, rakes, hoes, and forks	38	33
ARTICLE 173.—Tools used in trades, arts, manufactures, and works	61	38
ARTICLE 174.—Locomotives, tenders, steam fire-engines, and other appliances against fire, as also all machines and apparatus not specially named of wrought and cast iron or steel, with parts consisting of other materials or without the same	61	38
OBSERVATION.—Detached metallic parts of machinery and apparatus belonging to the same and imported with them shall be liable to the duty established for machinery; parts of machinery, apparatus imported separately shall be liable to duty under the corresponding heads of the tariff.		
ARTICLE 175, PARAGRAPH III.—(Detached parts and fittings of every kind of machinery and apparatus (except of copper or brass under I of this article) imported separately from the machinery or apparatus, including all revolving straps and driving bands (belting) and metallic webs used in manufactories), and, observations: (By parts of machinery and apparatus are understood such as have no independent use and form a direct part of the machinery or apparatus and cannot be employed except in combination with other machinery, &c., such as steam cylinders, pistons, cranks, eccentrics, connecting-rods, fly-wheels, checks, bristles, and spindles to the same), to be excluded from the tariff.		
ARTICLE 236.—Railway cars:	<i>Per axle.</i>	<i>Per axle.</i>
I. Trucks and coal cars	\$57 75	\$57 75
II. Goods cars	84 70	77 00
<i>Passenger cars.</i>		
III. Third class and baggage and mail cars	134 75	} 134 75 to 231 00
IV. Second class	178 25	
V. First and second class	211 75	
VI. First class	250 25	
<i>Tramway cars.</i>		
VII. Double horse	154 00	77 00
VIII. Single horse	115 50	77 00

On the 3d-15th June His Imperial Majesty by sign manual was pleased to assent to the above decision.

ST. PETERSBURG, RUSSIA, June 18-30, 1880.

RUSSIAN IMPORTS AND EXPORTS FOR THE FIRST HALF OF THE YEAR 1880.

REPORT BY CONSUL-GENERAL EDWARDS, OF ST. PETERSBURG.

I have the honor to herewith inclose a statement showing the quantity of the principal articles of merchandise imported into and exported from the Russian Empire during the first half of the year 1880, and also for the corresponding period of 1879.

It will be seen that coal and unwrought iron show a marked increase in the quantity imported.

The large increase in the exportation of iron is due to the sale of a large quantity of old iron rails on American account.

The great diminution in the exportation of grain is due to the bad harvest this year and the excessive exportation in former years.

W. H. EDWARDS,

Consul-General.

UNITED STATES CONSULATE-GENERAL,

St. Petersburg, Russia, September 4, 1880.

Statement showing the importations and exportations of the principal articles of merchandise of the Russian Empire during the first six months of the years 1879 and 1880.

IMPORTATIONS.

Articles.	Quantity, 1879.	Quantity, 1880.
Sugar, raw and refined	pounds. 5,940	18,432
Tea	12,631,724	12,391,360
Coffee	8,260,356	7,258,531
Oil	22,788,936	21,171,960
Wine in casks	439,309	440,425
Wine in bottles	120,722	149,179
Salt	pounds. 104,430,628	164,898,656
Herrings	53,475,920	47,167,668
Other fish	2,327,000	2,458,116
Leaf tobacco	1,730,196	1,977,964
Manufactured tobacco	43,920	67,320
Raw cotton	116,251,200	102,096,944
Cotton yarn	16,730,028	12,050,064
Indigo	1,191,644	841,240
Illuminating oils	17,963,324	16,003,152
Iron, unwrought	173,541,852	231,548,364
Iron, in bars, &c.	84,586,536	74,090,132
Iron, in sheets, &c.	34,945,740	37,164,000
Iron rails	4,067,016	4,497,440
Bessemer steel rails	96,067,080	67,651,524
Lead	15,649,488	11,590,092
Wool	17,685,684	15,232,968
Silk	633,816	548,392
Soda	27,542,772	25,239,564
Coal	943,927,344	1,488,791,340
Locomotives, machinery, &c.	33,826,976	33,523,036
Tissues of cotton	1,567,836	1,713,996
Tissues of wool	2,261,376	2,260,308
Tissues of silk	110,592	165,090
Tissues of flax, value in dollars	\$524,935	\$490,175

EXPORTATIONS.

Wheat	bushels. 41,120,100	19,071,936
Rye	35,781,486	19,991,622
Barley	6,113,892	4,679,694
Corn	2,324,874	5,554,224
Pease	798,180	589,014
Oats	23,483,370	22,261,124
Flour	854,244	954,114
Other cereals	2,089,044	3,091,278
Flax and hemp seed	pounds. 26,327,304	25,950,492
Other oleaginous seeds	4,681,872	10,155,068
Oil-cake	24,023,707	26,391,636
Butter	2,523,764	1,849,104
Spirits	42,762,862	40,158,284
Tobacco	1,269,612	1,087,160
Sugar, raw and refined	661,608	4,812,624
Mutton and sheep	number. 394,744	390,112
Horned cattle	23,064	14,920
Horses	24,031	12,492
Tallow	pounds. 1,888,740	4,473,684
Flax	259,671,932	245,931,768
Hemp	60,854,948	62,279,592
Leather	4,070,856	7,747,992
Bone	594,540	748,008
Wool	9,327,516	16,398,468
Sides of pork	1,875,960	2,327,400
Potash	354,636	400,688
Iron	4,978,224	173,602,884
Rags	4,922,568	13,968,924
Rope	3,828,824	3,881,376
Coarse cloth	552,875	968,822
Furs	pounds. 1,121,228	1,473,084
Wood, value expressed in dollars	\$3,349,507	\$6,725,762

RUSSIAN RAILWAY RECEIPTS FOR THE FIRST HALF OF THE YEAR 1880.

REPORT BY CONSUL-GENERAL EDWARDS, OF ST. PETERSBURG.

I have the honor to report that the declaration of the receipts of the Russian railways for the first half of the year 1880, as compared with the declaration of the receipts for the corresponding period of last year, shows a difference of 13 per cent. in favor of 1879.

The receipts for the first half of the year 1880 were \$4,000,000 less than the receipts for the first half of the year 1879, and \$7,000,000 less than the receipts for the corresponding period of 1878. This is an immense decrease considering that the amount involved is only \$35,000,000. The lines leading to the seaports show the greatest falling off.

The customs receipts for the first half of the year 1880 show an increase of \$500,000, as compared with the receipts for the corresponding period of 1879.

The decrease in the receipts of the railways may therefore be attributed to the falling off in the exports.

Grain, one of the principal articles of export from Russia, shows a falling off of 36,000,000 bushels for the first half of the year 1880, as compared with the first half of the year 1879.

The unsatisfactory condition of the year's harvest in Russia, the scarcity of grain in store, and the present unprecedented prices of rye, the principal nourishment of the rural population, have caused much consternation among the provincial authorities. Consequently from many of the industrial sections of Russia representations have been made to the government in regard to the great danger likely to result from the excessive exportation of grain, and urging as a remedy the establishment of a tax on all grain destined for exportation. It is claimed by these authorities that home industries and foreign exportation consumed 78,000,000 bushels of grain during the year 1879, needful for internal consumption, and that the measures suggested are intended to protect the agricultural industries of the country until they are again on a healthy basis.

It is estimated that for food the seventy millions of inhabitants of Russia, in Europe, require a quantity of grain equivalent to 750,000,000 bushels of rye.

Notwithstanding the fact that the principal nourishment of the rural population is rye bread, the exportation of rye increased 230 per cent. from 1870 until 1879, without any marked increase in the production.

The exportation of this grain for the first half of the year 1880 shows a falling off of 47 per cent (or 16,000,000 bushels) as compared with the corresponding period of 1879.

From the present indications it is not probable that this deficit will be filled up by the exportation of the second half of the present year.

The Russian press urge with great earnestness various modifications in the present system of grain culture. Some papers urge the adoption of measures which will entirely prohibit the exportation of rye, and give entire liberty of commerce to all other cereals. Others claim that 70 per cent. of the wheat harvested is exported, and consequently its production could be diminished without prejudice to the interior necessities, provided the ground now used for wheat purposes is used for

rye, oats, and barley purposes. It seems that from 1870 until 1878, the exportation of wheat has, according to the year, varied between 40,000,000 and 100,000,000 bushels, showing a difference of 60,000,000 bushels between the good and bad years. It is now claimed that the production of a commodity which is subject to such variations does not offer to the producer a sufficient guarantee to continue its growth, especially in the face of the excessive competition from the United States.

Wheat has been grown in Russia, heretofore, for speculative purposes, wheat bread being consumed only by the inhabitants of the large cities. The great importance of wheat to the Russian Government is the essential rôle it plays in the exportations.

The principal object of the present modification urged by the press seems to be to convince the grain producers of the importance of cultivating cereals where they will be more or less free from American competition, such as rye, barley, and oats. They admit that when they add the ravages of injurious insects to American competition, it is quite clear that it is time to renounce the growing of wheat for purposes of speculation.

From present indications the decrease in the railway receipts seems likely to go on for the remainder of the present year. When the railways of a great agricultural country like Russia show a marked falling off in the receipts, it is proof positive that there is some disturbing influence at work with the agricultural industries.

In this connection, it is proper that I should notify you of the arrival and sale of two cargoes of American corn at Reval, Russia.

I am informed that this corn is intended for the still, and that the prospects for the development of a new market for American corn are fair.

W. H. EDWARDS,
Consul-General.

UNITED STATES CONSULATE GENERAL,
St. Petersburg, Russia, September 2, 1880.

AMERICAN WHEAT IN RUSSIA.

REPORT BY MINISTER FOSTER, OF ST. PETERSBURG, ON THE IMPORTATION OF AMERICAN WHEAT INTO RUSSIA, AND ON THE ECONOMIC AND SOCIAL CONDITION OF THE PEOPLE.

In my No. 40, of the 25th ultimo, referring to the wretched condition of the agricultural interests of the country, and the effects of the successful competition of the United States in supplying European markets with grain, I stated that it was predicted by some that before next year's crop was harvested American wheat would be imported into St. Petersburg. This event has already transpired within the past two or three weeks; orders have been sent from this city, and some cargoes of wheat have already arrived here. The same has also occurred at Odessa and other Russian ports. These facts can hardly be said to indicate a large market here for American wheat, as this grain furnishes a very small part of the bread consumed by the mass of the people, who require a cheaper and coarser article, such as rye or Indian corn; but it demonstrates unmistakably the shortness of the cereal crops. The scarcity is becoming so great that it was currently reported and generally believed that the government was considering the propriety of prohibiting entirely the exportation of rye. The rumor has been denied by the official organ,

but the fact is universally admitted that great scarcity exists, and that without government or other charitable aid in certain districts there will be much suffering among the poorer classes.

One of the leading journals of this city—the *Golos*—in discussing the economic and social condition of the country, draws the following gloomy picture:

Frightful distress is not only knocking at our doors, but has already taken triumphant possession of our homes. This is a question that has not been worked up by commissions and subcommissions, and its name is the economic condition of Russia. We cannot fathom all the depths of this question, but the symptoms are plain, and show us whither we are drifting, not by force of newspaper illusions but by the fatal force of facts. The value of one franc has already reached 40 copecks, and one ruble will soon be worth no more than 50 copecks (50 per cent. discount). American vessels with grain and tallow are arriving at our ports. We begin to buy what we formerly exported. Our position before Europe has changed round, and we are unable to change its money. From all sides comes news of the harvests being below the average; of want and hunger from which people will become diseased, and perhaps die; beetles, worms, and locusts are eating up the corn; the diminution of cattle surpasses all belief; diphtheria is taking off the growing generation; breadstuffs have already reached 5 copecks per pound. Every one feels that Russia does not subsist by the produce of its own land, but is wasting its capital in cutting wood, selling surplus cattle, pulling straw from its thatched roofs, and depriving itself of its very clothes and shoes.

JOHN W. FOSTER,
E. E. & M. P.

UNITED STATES LEGATION,
St. Petersburg, Russia, October 14, 1880.

EMIGRATION FROM SWEDEN-NORWAY.

REPORT OF CONSUL CADE.

I consider it worth while to call your attention to the large tide of emigration at present setting from this country to America.

The annual number of emigrants between 1874 and 1878 had fallen to about a third of what it had been between 1866 and 1872. During the latter period the annual number varied from 12,000 up to 18,000. In 1873 it fell to 10,000, and during the years 1874 to 1878 it only ranged between 4,000 and 5,000. The aggregate number of Norwegian emigrants in the period 1866-70 was 75,000, in 1871-75, 47,000; and in 1875-78, 22,000 persons. In the year 1869 the emigration reached its maximum, viz, 18,000 persons. The Norwegian statistics show that during the years 1871-73 the population of the cities contributed a fourth of the whole number, while in 1874 and 1875, respectively, only the sixth and the seventh parts were from the towns. Hence, Norwegian emigration consists chiefly of agricultural laborers. Last year, when a general depression still prevailed in this country, while the reports from America told of increased wages and activity in trade and industry, the emigration from Norway rose again to about 8,500 persons.

The present year has already shown a remarkable increase of Norwegians seeking new homes in the far West. A similar movement is at the same time going on, on a large scale, in the neighboring countries, Sweden and Denmark. Up to this date 3,033 persons have emigrated from this port alone, of whom 2,666 adults, 296 children, and 71 infants under one year. For 558 emigrants, or about a fifth of the whole number, tickets were prepaid in America. Three English steamers are this week taking out about 700 emigrants via Hull and Liverpool, and besides

that a constant stream passing from this port over Bremen and Hamburg. A fortnight ago the North German Lloyd Line, plying between Bremen and New York, sent one of its large steamers, the *Hohenssaufen*, to this port for the shipment of emigrants, and more steamers of that company are intending to touch here during the summer. It is, of course, to the advantage of the Norwegian emigrants to be forwarded direct to America, instead of being sent across England.

The food provided on the German vessels seems more to the taste of Scandinavian passengers than that they get on the English lines, so a large proportion of the emigrants from Norway will doubtless be diverted from the usual route over England. A direct Norwegian line between Bergen, Christiania, and New York existed some years ago, but has been discontinued.

As far as can now be calculated, the Norwegian emigration in 1880 will add between 10,000 and 12,000 inhabitants to the population of the United States.

GERHARD GADE, *Consul*.

UNITED STATES CONSULATE,
Christiania, Norway, April 19, 1880.

SWEDISH-AMERICAN COMMERCE.

REPORT BY CONSUL OPPENHEIM, OF GOTHENBURG.

The past year, ending June 30, 1880, has been commercially a prosperous one for this district, the three great staple exports, oats, timber, and iron, having been in great demand at remunerative prices. The latter article, being largely used in our industries, is of special importance to American commerce, and the following cursory review of the iron trade during the consular year may therefore be of interest.

THE SWEDISH IRON TRADE.

Up to July, 1879, iron had been accumulating in the makers' hands; the prices ruling were extremely low, in many cases below the cost of production; charcoal pig iron could then be bought for £3.5 to £3.10 per ton, hammered bars for £7, and rods for about £9.10. In August, the tide began to turn; very large orders were then received from England and the United States, soon supplemented by others during September and October; the old stocks were cleared out and large contracts were made for future delivery. By the end of January of this year, prices had reached their maximum, being about £7.10 for pig, £13 for bars, and from £15 to £17 for rods. I understand that in the majority of cases the manufacturers did not get the benefit of these high figures, on account of contracts previously made, yet the prices obtained, especially in conjunction with the large quantities sold, were undoubtedly remunerative and satisfactory. The reaction which has since taken place has put down the figures to £5 for pig, £10 for bars, and about £13 for rods, all still considerably higher than those ruling at this time last year. The quantity of iron and steel taken by the United States during the last twelve months is unprecedented and transcends considerably even the large export of 1871-'72.

IMPORTS FROM THE UNITED STATES.

The revival of Swedish industries has had the usual effect of increasing the consuming power of the people; imports of American mer-

chandise especially seem to have been stimulated by the good times. Although prices of American produce were considerably higher this year than last, the quantities taken in this market were, in almost every instance, considerably larger. I inclose statements showing quantities and values of American products imported into Gothenburg during 1879. The total import of cotton was 30,357 bales, of which 19,213 were of American growth and the rest Surat. Taking 375 pounds per bale for East Indian and 465 pounds for American, 68.19 per cent. of the total import is shown to have been American, a proportion greater by about 20 per cent. than has usually heretofore been the case. There seems to have lately sprung up a demand for American grass seeds among the farmers in this section. Indian corn, an article heretofore comparatively neglected here, has also recently begun to be imported; it is thus far almost exclusively used for distilling purposes, the people apparently not appreciating its great value as a cattle food; the stills in Sweden generally make potato spirits only, and the first imports of Indian corn were made on the occasion of a deficient potato crop some seven or eight years ago. Whether on account of its lower price in the United States or an increased demand for spirits here, Indian corn seems to have grown in favor as a distilling material, and although this year's potato crop is a large one, three cargoes of corn from the United States have been landed at this port within the last month.

Our tools and implements are maintaining their popularity in this market; our hammers, chisels, axes, pitchforks, spades, and agricultural implements generally, are recognized as the best and meet a ready sale; the more expensive agricultural appliances of American make, such as reapers and binders, horse powers, thrashers and cleaners, although occasionally seen, cannot be said to have obtained a secure foothold in this district; the reason, as stated to me by the merchants here, is the greater expensiveness of our goods as compared with the English or domestic articles, to which may also be added the greater freight charges; the superior efficiency and higher finish of the American machines is admitted, but the peasant farmers of this district, being almost universally men of small means, want cheaper appliances. The English and Swedish makers appreciate this, and furnish the rough and cheap machines wanted, hence they continue to find a market for their wares. There is no doubt that their success where we have comparatively failed is due to the reasons above stated.

ERNEST L. OPPENHEIM,

Consul.

UNITED STATES CONSULATE,

Gothenburg, Sweden, October, 1880.

WAGES AND FOOD PRICES IN SWEDEN.

REPORT BY CONSUL OPPENHEIM, OF GOTHENBURG.

WAGES IN GOTHENBURG.

The wages earned at present in Gothenburg by the different classes of artisans and other wage-receivers are as follows:

Blacksmiths.....	.....per week..	\$4 05
Machinists.....	.....do.....	3 54
Boiler-makers.....	.....do.....	3 30
Foundrymen.....	.....do.....	3 03
Engineers.....	.....do.....	4 85

Bricklayers:			
7 months in the year.....	per week..		\$4 45
5 winter months.....	do.....		2 70
Plasterers:			
7 months in the year.....	do.....		4 45
5 winter months.....	do.....		2 16
Carpenters.....			
Cabinet-makers.....	do.....	\$4 86 to	6 75
Upholsterers.....	do.....	3 24 to	5 40
House-painters:			
7 months in the year.....	do.....	4 05 to	5 67
5 winter months.....	do.....	2 70 to	4 05
Printers (piece-work only).....	do.....	3 50 to	9 44
Shoemakers.....	do.....	3 24 to	4 32
Tailors, by piece-work.....	do.....	4 86 to	6 75
Tailors, on time.....	do.....	4 05 to	4 86
Hatters.....	do.....	4 05 to	4 86
Tanners.....	do.....	3 24 to	6 75
Tinsmiths.....	do.....	3 24 to	4 05
Gas-fitters.....	do.....	3 24 to	4 86
Watchmakers.....	do.....		8 10
Butchers (board and lodging).....	do.....	1 08 to	1 34
Bakers (board and lodging).....	do.....	80 to	1 08
Cotton-mill operatives:			
Foremen.....	do.....	3 24 to	4 05
Carders (men).....	do.....	2 70 to	3 24
Carders (women).....	do.....	1 08 to	1 34
Reelers (women).....	do.....	1 08 to	1 34
Spinners (boys and women).....	do.....	1 21 to	1 34
Mule-tenders (boys and women).....	do.....		1 34
Weavers (women), piece-work.....	do.....	1 34 to	1 62
Laborers.....			
Longshoremen.....	do.....	40 to	54
Sailors.....	do.....		67
Domestic servants (females), board and lodging.....	per month..		12 00
Seamstresses.....	do.....		2 15
	per day..		32

AGRICULTURAL WAGES.

In answer to a question propounded by a parliamentary committee appointed to inquire into the economical condition of the agricultural and industrial classes, the provincial authorities gave the following figures as the wages paid agricultural laborers in this province during the last 16 years:

	Summer, per day.		Winter per day.	
	Highest.	Lowest.	Highest.	Lowest.
	* Kr.	Kr.	Kr.	Kr.
Five years, 1865-1869.....	1.33	0.75	1.00	0.50
Five years, 1870-1874.....	1.75	0.85	1.00	0.50
Five years, 1875-1879.....	1.90	1.00	1.25	0.67
Year 1880.....	2.00	0.75	1.00	0.67

* Kroner = 20.8 cents.

CONDITION OF LABOR.

When it is considered that summer work in this latitude only lasts five months, making the period of low wages cover over half the year, it will be seen that the agricultural laborer in Sweden is but poorly off. The figures, however, seem to show that his labor, though yet deplorably low, is slowly appreciating, a feature not found in the artisan class as a

whole; in most trades wages have now been very nearly stationary for some years, and in a few cases have even receded somewhat.

FOOD PRICES IN GOTHENBURG.

The prices of necessaries in Gothenburg, of the quality generally used by workingmen, are at present as set forth in the following list; for convenience' sake measures and weights have been reduced to the American standards:

Wheat flour.....	per 100 pounds avdp..	\$3 57
Rye flour.....	do.....	2 28
Bacon.....	per pound avdp..	10
Lard.....	do.....	14
Butter.....	do.....	23
Beef.....	do.....	10
Mutton.....	do.....	09
Sugar, granulated.....	do.....	11
Coffee, green (Rio).....	do.....	22
Tea.....	do.....	81
Cheese.....	do.....	14
Salt cod.....	per 100 pounds avdp..	2 50
Potatoes.....	per barrel (3¼ bush.)..	1 40

ERNEST L. OPPENHEIM, *Consul.*

UNITED STATES CONSULATE,
Gothenburg, Sweden, October, 1880.

AMERICAN TRADE WITH SWITZERLAND.

REPORT BY CONSUL MASON, OF BASLE.

In a country of such rigidly limited resources as Switzerland, where only the utmost economy and painstaking, patient industry can enable its people to subsist, the balance of foreign trade is naturally a very important subject of solicitude to the Federal Government. To export as much as possible of the products of Swiss labor, and to import from abroad as little as possible, particularly from a remote country like the United States; which imposes a protective tariff on its own imports, is the commercial policy of the Republic of the Alps. So well has this policy succeeded that Switzerland exports something more than twelve million dollars' worth of goods annually to the United States, against imports of barely two millions from our country. It is not surprising, therefore, to find the Swiss authorities very watchful and exacting concerning the quality and condition of all exports from remote countries. There are certain products, however, in which the United States may, by reason of their impregnable advantages in respect to production, largely increase their present trade with Switzerland, provided our exporters comprehend clearly the difficulties they must meet with here, and prepare for them.

CANNED AND PRESERVED MEATS.

In respect to canned and preserved meats, the following suggestions are offered, viz: All these articles are rigidly inspected before they are allowed to be sold. In some cases the salts of lead have been found in the outside layers where the alloy used in soldering the can has come in

contact with the meat. The obvious remedy for this would seem to be to use some kind of solder in which lead is not an ingredient. In smoked and dried hams, &c., extraordinary care should be taken to avoid sending meat infected by trichinae. Switzerland is morbidly fearful of trichinae, and the European press never fails to make the utmost of any report of rinderpest, hog cholera, Texas cattle fever, or any other disease among the cattle or swine of the United States which might possibly affect the condition of our meat exports. The mere suspicion that an invoice of American hams or bacon may contain trichinae has resulted more than once in the seizure and condemnation of the entire lot, and in one or two instances retail dealers, who had set out to make a specialty of American meats, have been obliged to give up their trade altogether. But with all these obstacles the importation of American meats into Switzerland is increasing steadily and may be still further augmented if proper precautions are observed as to condition and quality.

PRESERVED FRUITS AND VEGETABLES.

Preserved fruits and vegetables from the United States have almost entirely supplanted all supplies of that kind from France except pease, the French *pettis pois* having alone withstood successfully the competition of the fresh, tender, highly-flavored vegetable from the United States. Particularly is American asparagus—and notably that from California—now preferred to that of any other country, and with due care and enterprise our exporters may largely increase their present trade with Switzerland in all those articles.

Fresh fruits might be sent here in large quantities if properly packed. The apples of Central Europe are flavorless and poor. American apples are regarded with great favor, but they should be carefully dried and wrapped separately in soft paper that has been impregnated with salicylic acid, which is a strong antiseptic and is wholly odorless and harmless.

BUTTER.

The little butter that is imported into Switzerland comes mainly from Denmark, and is packed in tin boxes instead of casks. In this form it is sent to Brazil and the East Indies. If properly worked and the buttermilk thoroughly withdrawn before being thus packed, it keeps perfectly sweet for years. During the summer season, when Switzerland swarms with American and British tourists, there is a strong demand among the almost innumerable hotels and pensions of this country for salted butter *with a flavor*. No effort has been made by American exporters, so far as I can discover, to meet this demand. Swiss butter—the best of it—is fresh and sweet, but it is generally white, unsalted, and entirely destitute of the rich flavor which characterizes the American article.

MISCELLANEOUS MANUFACTURES.

In miscellaneous articles of domestic use and small agricultural implements there is an opportunity for developing still further the small demand already created in this country. American hoes, rakes, and saws are sold here, and are preferred to those made in other countries. A few weeks ago a large illustrated catalogue came to this consulate from a firm in New York which manufactures tin utensils by the stamping process. The circular was sent to a leading wholesale house in

Basle, and the result was an experimental order for a considerable amount.

Every observing American traveling in this country must be often struck with the clumsiness of a great many of the simplest appliances of daily life; for instance, the market women who sell fruit and vegetables from door to door in Swiss towns carry a cumbersome, old-fashioned balance, with several pounds of iron weights to weigh their sales of fruit.

The balance and its iron weights frequently constitute quite half the burthen of the market-women. The same primitive apparatus is used generally by butchers and grocers. The original cost of such a machine must be much greater than that of a light, compact spring balance of the American pattern. This is mentioned as a single example of a large class of every-day hardware in which American dealers could offer strong inducements. Large farming implements, such as reapers, mowers, seed drills, and cultivators, are not used to any extent in this country, and the plows are for the most part primitive and of poor construction.

Manufacturers and merchants desiring to cultivate trade with Switzerland should be careful to state clearly in their advertisements and circulars the approximate cost of packing, drayage, &c., for delivery of goods on board ship at the nearest American port. Ignorance of the incidental expenses of international commerce often prevents merchants in inland countries from seeking distant markets, the language and usages of which they do not understand.

FRANK H. MASON, *Consul*.

UNITED STATES CONSULATE,

Basle, Switzerland, October 28, 1880.

MANUFACTURE OF SWISS EXPORT-BEER.

REPORT BY CONSUL MASON OF BASEL.*

It is noted that the United States exported to Mexico, during 1879, bottled beer to the aggregate value of \$59,524. To Brazil the same article was exported to the amount of \$25,471. As this traffic seems to be a growing one, and as the Swiss have been conspicuously successful in the same business, I have thought it proper to include in this report the following translation from a technical journal, of the principal requirements in the manufacture of the renowned "Condensed Export Beer" made at Cham, in Canton Zug:

The first and principal requisite is to take a white, soft barley, and not to change the water too often when it is soaked; the malt must be carefully kiln-dried, and it must be observed that all the malt which is destined for the production of bottled beer must undergo a very high degree of kiln-drying. It must be further observed that every beer destined to a long journey and to remain bottled for a long while must have fermented as strongly as possible, and that under half of the original standard. The chief problem, however, is to bottle the beer as free from dregs as possible, without, however, the brewer making use of any means to clear it, be it ever so drastic. The only means here is a good filtration. The beer so produced has, from the almost entire want of cellular dregs, become, as it were, lifeless; that is to say, there exists no cause to produce the carbonic acid, which imparts to the beer its refreshing qualities. But in this case the present method makes a radical and abrupt departure from all previous traditions by employing simply the carbonic-acid apparatus for supplying carbonic acid, the same as is done with the "charging" of champagne and soda-water.

*The several interesting reports herewith, by Consul Mason, were embraced in one general report when received at the Department, as the references therein imply.

Concerning the process of *condensing the beer*, by which its bulk is so greatly reduced, and its capacity for withstanding the effects of transportation and change of climate is considerably enhanced, another authority says:

The process is comparatively a simple one, but will no doubt bring about a great change in the beer export trade, especially as regards southern countries. Beer is caused to evaporate during its fermentation, or even after it has been entirely fermented, in an apparatus called "a vacuum," in a like manner as is done with milk, and until the liquid has become as thick as theriac or thickened milk. Alcohol and water are condensed by means of the ordinary condensing apparatus, and they are separated either at once or afterwards. Later, the pure alcohol is mixed again with the product of condensation, which latter occupies but one-eighth or one-twelfth of its original bulk. Out of this a very drinkable juice of barley (*gerstensaft*) is reproduced, by restoring to it the quantity of water which has been distilled from it, or more water, if the beverage is to be less strong, and then the liquid is exposed to fermentation by adding to it some lees or ordinary beer. The fermentation is ordinarily quickly accomplished, and from it results a beer which cannot be distinguished from beer which has not been condensed, a beer amply containing carbonic acid (*kohlensäure*), and all the qualities possessed by the original beverage, of which it has been made. The thickened juice of barley conserves itself in the air without any change for an unlimited time, and, so far as has thus far appeared, in every climate. It is packed in cases inwardly lined with sheets of tin. As for the advantages of this improvement they consist in: (1) Saving of freight, which is quite important, the volume of the condensed product being, on an average, only one-tenth of that of the ordinary beer; (2) the fact that it conserves itself under every climate for a certain time and can at once be converted into a refreshing beverage, and (3) the faculty of producing beer of different degrees of strength that can be drawn from the cask on the spot where it is to be consumed. By the old process, only beer very strong and richly alcoholized can be sent to tropical and semi-tropical countries, and such a beer is not always wholesome.

Great Britain exports condensed beer to the value of \$12,000,000 annually, and the British Government has recently authorized the establishment of a brewery for such production on a large scale for the use of the army at Allahabad. The rapidly growing use of malt liquors in the United States, and the high reputation attained by American brewers, would seem to indicate that a judicious adoption of the condensing process, now so successfully employed in England and Switzerland, might enable our exporters to largely increase their traffic with Central and South American countries.

FRANK H. MASON, *Consul*.

UNITED STATES CONSULATE,

Basle, Switzerland, October 28, 1880.

THE SILK INDUSTRY OF BASLE.

REPORT BY CONSUL MASON ON THE SILK MANUFACTURES OF BASLE AND THEIR EXPORTS TO THE UNITED STATES.

SILK RIBBONS.

A report of the industry and commerce of this consular district and their relations to those of the United States must naturally begin with the manufacture of silk ribbons, which now, as heretofore, furnishes more than half the entire sum of exports from this district to the United States.

The present condition of the trade will be better understood from a brief *résumé* of the ribbon exports during the past ten years.

During the prosperous period of 1870, 1871, and 1872, the Basle district sent to the United States silk ribbons to the amount of about three and a

half millions dollars annually; the export for 1872 being \$3,518,779. The effect of the panic of September, 1873, was immediately felt in this class of luxuries, and the amount for that year declined to \$2,479,609. The trade decreased steadily until 1876, when the twenty-six manufacturers who had formerly exported ribbons from Basle to the United States had been reduced to eight, and their aggregate export for the centennial year was only \$811,224. During that year and the season of 1877, they comforted themselves with the hope that the long delayed but eventually inevitable return of prosperity in the United States would bring renewed demand for ribbons. This hope was slightly encouraged by the exports of 1878, which reached an aggregate of \$1,222,364. In 1879 the result was still better, the shipment of ribbons being \$1,801,648, and the commercial journals of Switzerland rejoiced in the hope that, notwithstanding the steadily increasing competition of St. Etienne and the American silk-spinners, the full return of general prosperity in the United States would increase the demand for Swiss ribbons to the proportions of 1872.

This expectation has been partially fulfilled. In November, 1879, the agents of leading importers in New York and Philadelphia returned to Basle and made large contracts for the spring market. They came again in April and May, and, as a result, the export of ribbons from this district to America during the first three quarters of 1880 has amounted to \$2,338,165, with a fair prospect of exceeding three million dollars before the close of the year.

But, although this result has been temporarily encouraging, the Swiss silk-spinners clearly understand that their hold upon the American market is very slight and uncertain as compared with that of years ago. Only by virtue of a steady decline in the raw-silk market during the past six months, and by limiting their working people to wages barely sufficient to sustain life, have they been able to compete with the growing silk industries of the United States. In Europe the season's trade has been desperate. Fashion has, to a great extent, ignored the use of ribbons. There has been no demand for them during the summer or autumn in England or Germany, and France has drawn her limited supply from St. Etienne, where labor is even cheaper than in Switzerland. As a result, the Swiss manufacturers adopted the only resource open to them and consigned to America at a venture the ribbons which had been made for the usual European trade. It thus happened that during the months of July, August, and September the export of ribbons was phenomenally heavy, and the market in New York has become heavily overstocked. Whether this overstock can be worked off in time to stimulate the usual orders in November for spring delivery remains to be seen.

THE PRESENT OUTLOOK.

The present outlook of the silk industry in Basle is very depressed. For the reasons stated, there is little or no European demand. Plushes, velvets, and satins have taken the place of ribbons in the fashions of the day. The probability that these European fashions may influence those of America next spring, and so reduce the demand for ribbons in that country, makes the American buyers cautious and Swiss manufacturers apprehensive. The few New York buyers now in Basle have the market in their own hands. Not for many years have prices been so low. The general schedule is at least 12 per cent. below that of June and July, and the only hope of early relief is from the already overstocked American market.

The rigid enforcement of the import duty laws during the past six months has greatly reduced the percentage of profit on the large class of consigned ribbons, and it is well understood that if the present rate of duty on silk is maintained and enforced as at present, the export of Swiss ribbons to the United States must ultimately cease. It is this fact which underlies the general and otherwise inexplicable hostility of the Swiss people to the Republican party in the United States, and fosters the ill-concealed hope that the elections of this year may result in a change of policy in the laws affecting American import duties.

CAPACITY OF THE SILK INDUSTRY OF BASLE.

There are in this city 1,050 power looms, and in the country adjacent about 4,000 hand looms adapted to weaving ribbons. The wages of the weavers who operate these looms range from \$3.50 per week for adults down to \$1.40 per week for children. For all these operatives eleven hours' labor constitutes a day's work. Even at this rate labor is very irregular and uncertain, few of the manufactures having for more than a few weeks of each year employment for all their looms, and many of them charitably giving the poor people work for weeks at a time upon which the employers are much more liable to realize loss than profit.

EMIGRATION OF SWISS OPERATIVES TO THE UNITED STATES.

Under these circumstances it is but natural that there should be among the Swiss silk-weavers a strong inclination to emigrate to the United States. For obvious reasons their employers here and the Swiss Government at large discourage the emigration of their skilled operatives, but many have gone and more will follow whenever they can command the means of transportation. In view of the conflicting reports as to the experience of the Swiss silk-weavers who have emigrated to the United States, Mr. Rudolf Konradi, the Swiss consul at Philadelphia, was applied to for information, and recently sent the following guarded but definite reply:

* * * The manufacture of silk has been during the year 1879 likewise successful. In my district, including New Jersey, there arrived during the year a number of Swiss silk workmen with a view of ameliorating their condition. All of these, such at least as understand their business and are entitled to be considered as in some degree skilled or clever operatives, appear to have found with little delay well-paid employment. The wages paid in this manufacture are, as compared to those paid in other branches, excellent; and if the work continues as favorable as it has been for several years past, even during the period of our commercial depression, all silk workmen who come to this country must on the whole considerably improve their condition.

CHARACTER OF SILK GOODS EXPORTED TO THE UNITED STATES.

The declining market above described and the desperate competition to which the manufacturers are exposed have tended on the whole to degrade the character of the goods exported. The legitimate buyers in the United States, the long-established and responsible firms which send their skilled agents to this market and order their goods direct, are able to maintain their ordinary high standard of excellence in design and quality. But a large proportion of the ribbons consigned to New York agents, to be sold for what they will bring, are wretchedly cheap and inferior. Many qualities (particularly in black) are loaded with salts of lead and mercury to increase their weights; some are even drawn through a sirup of sugar to impart a temporary gloss and firmness to the fabric,

and in others all the skill expended in the processes of manufacture appears to be devoted to covering the large proportion of cotton used with the smallest possible allowance of silk that will make the product salable. For this reason, many invoices of ribbons which, at a superficial glance, would seem to be undervalued are really invoiced at their full value.

In silk tissues the trade between this district and the United States is practically at an end, the value of the entire export in that class during the first three quarters of 1880 being only \$137,776. Only one manufactory here now exports silk linings and trimming goods to our country, and it only persists because there is no market for its products elsewhere.

The one active demand at present is for plushes made of chappe-silk, and used in trimming, and there is very little machinery in the Basle district which can be utilized in the manufacture of that class of goods.

FRANK H. MASON, *Consul*.

UNITED STATES CONSULATE,

Basle, Switzerland, October 28, 1880.

THE MANUFACTURE OF ANILINE COLORS.

REPORT BY CONSUL MASON, OF BASLE, SWITZERLAND.

By far the most interesting and important subject with which the present report undertakes to deal is the manufacture of aniline colors, under which general term are embraced the varied and brilliant coloring and dyeing materials now manufactured chemically from the several products resulting from the dry distillation of coal-tar, viz, aniline, naphthaline, phenol, and anthracine. Although Switzerland produces none of this material, and must draw her entire supply from Germany and France, her aniline industry has within the past ten years attained important proportions. Four large establishments are now in operation in Basle, and one near Geneva, the combined annual product of which is about 20,000,000 francs.

The processes are mainly secret, access to the laboratories is always difficult and in many cases impossible to obtain, and detailed statistics of the business are not attainable. The very imperfect records of this consulate show that the exports of aniline colors from Basle to the United States began in the summer of 1878, at the close of which year they had reached the sum of \$12,000.

During the second quarter of 1879 the amount exported was valued at \$14,176; during the last quarter, \$16,512. The corresponding quarters of 1880 show respectively exports of \$27,536 and \$36,149, from which it appears that the trade is rapidly growing. The fact that aniline dyes can be made from the residuum of petroleum-refining as well as from coal-tar, and for the additional reason that the United States yield exhaustless quantities of both these materials, this whole subject is of the highest practical interest to the American public. The capital required to establish a full-sized laboratory for the manufacture of aniline colors is about \$200,000. Success depends upon the skill and experience of the chemists employed and the practical ability of their assistants. Many of the operations are of extreme delicacy, the colors produced depending upon the most exact conditions of temperature and the nicest combinations of ingredients. Experienced chemists in this

field command salaries of from \$2,000 to \$10,000 annually, and discoveries which enable an operator to make a special color are liberally rewarded.

Thus stimulated, the German and Swiss Universities offer special courses of study in aniline chemistry, and the practical result thus far is that dyes have been produced from coal-tar which are rapidly supplanting such standard coloring materials as safflower, turmeric, cochineal, kermes, and various tropical dye-woods. Even a perfect substitute for madder has been produced, and the cultivation of that plant, which has hitherto been worth not less than \$12,000,000 annually to France, Italy, Holland, and the Caucasus, is threatened with hopeless disaster. As a final triumph, the aniline chemists have obtained a perfect substitute for indigo, which, although as yet produced only in experimental quantities, will soon be added to the rapidly lengthening list of standard aniline colors. Nearly every chemical used in this important industry may be more cheaply obtained in the United States than in Switzerland. One of the largest aniline manufacturers here has recently formed a partnership with a young Swiss chemist in an enterprise to establish in America a large laboratory for the manufacture of aniline colors from the refuse of petroleum. The chemist alluded to has made a valuable discovery in the production of certain colors from the residuum of the oil refineries, and to this the Basle manufacturer contributes sufficient capital to establish the business in the United States. As aniline colors are applicable to the dyeing of almost every kind of wool, silk, cotton, straw, and leather material, and since the use of such coloring matter is rapidly increasing in the United States, it would seem inevitable that their manufacture from the abundant material always at hand in our country must develop surely and rapidly. Competent chemical skill and experience, which may be always had in Europe for adequate compensation, added to moderate capital and good management, can hardly fail to command success.

FRANK H. MASON,
Consul.

UNITED STATES CONSULATE,
Basle, Switzerland, October 28, 1880.

LABOR AND WAGES IN SWITZERLAND.

REPORT BY CONSUL MASON, OF BASLE.

The item of labor being the one in respect to which the American employer and his Swiss competitor are subject to the most widely different demands and conditions, it has been thought proper to embody in this report, as far as practicable, a synopsis of the average wages paid to mechanics and workingmen in different departments of industry. In most countries such a report could be easily compiled from the labor statistics of the government and industrial associations, but in Switzerland no such statistics exist, or if they do they are withheld from publication, and, so far as I can ascertain, are therefore not attainable by ordinary methods. With a view toward gathering some trustworthy facts concerning the condition of the working classes in Switzerland, printed circulars of inquiry were sent out in behalf of this consulate by and in the name of the editor of the leading financial journal of Switzerland, published in this city, to the officers of the various guilds and

labor societies to which nearly all Swiss working people belong. The statistics which appear in this part of the present report are compiled from the returns of a large number of these guilds or unions, the whole having been carefully compared with reports of the same classes of wages furnished by the employers. The following scale of wages may be therefore accepted as substantially correct:

WAGES FOR GARDENERS AND FARM HANDS.

Gardeners.—Eighty dollars a year, with lodging, and board consisting of—*breakfast*, coffee with milk, roasted potatoes, and bread; *at noon*, soup, meat, vegetables, sometimes beer or wine; *evening*, coffee with milk, cheese, potatoes (often meat).

Farm laborers.—Adults, males, \$50 to \$60 a year, with lodging and board (as above); adults, females, \$14 to \$20, same, and some clothes; young men, \$20 a year, same, and clothes.

TRADES WAGES.

Wages for a day's work.

[Eleven hours, unless otherwise stated.]

Trades:

Carpenters	\$0 67 to \$0 78
Book-printers	88 to 95
Workmen in chemical laboratories	57
Slate-roofers (with bread, cheese, and wine at 4 o'clock p. m.)	78
Fresco-painters	86
Molders	86
Silk-dyers	76 to 95
Children	per week. 1 20
Cotton-dyers	86
Woolen-dyers	86
Potters (per 12 hours a day)	67
Coopers (per week, with board)	1 52 to 1 79
House-painters and varnishers	86
Engineers	76
Masons	84
Machinists	86
Tool-makers	95
Cabinet-makers	67 to 80
Saddlers	86
Tinners	67 to 78
Blacksmiths	95
Tailors (per week, with board and washing)	1 90
Tailors unprovided (per day of 14 hours)	95
Compositors	86
Day laborers	57
Upholsterers	86
Wheelwrights	76

Railway employes—per month.

Locomotive engineers (the day 13 to 16 hours)	\$55 80
Stokers (the day 14 to 16 hours)	28 83
Conductors (same)	37 20
Brakemen (same)	\$27 90 to 32 50

Nearly all these classes of working people are members of mutual health insurance companies. On part of the railway employes, this insurance against illness or injury is compulsory. None of the working people except railway employes have their lives insured.

The food of a majority of these people is coffee and bread in the morning, meat and vegetables at noon, and coffee and bread at night.

In several important classes of skilled labor, the returns thus far received are not sufficiently complete to justify a definite statement. If these returns can be obtained, they will be embodied in a supplementary report.

FRANK H. MASON,
Consul.

UNITED STATES CONSULATE,
Basle, Switzerland, October 28, 1880.

IMPORTATION OF AMERICAN COAL AND STOVES INTO GENEVA.

REPORT BY CONSUL ADAMS.

According to information supplied by James T. Bates & Co., American agents here, 500,000 kilograms of anthracite coal were imported into Geneva during the year 1879, of which about 400,000 kilos were sold. The freight to Geneva by New York, Marseilles, and Lyons is 37 francs per 1,000 kilos; the cost of unloading, storing, cartage, commissions, &c., with the loss by shrinkage during transit, amounts to 12 or 15 francs more, in all say 50 francs, the price at which the coal is delivered to the purchaser. It sells well at present rates, but the obstacles to its general introduction are ignorance of its peculiar qualities, the necessity of modifying furnaces, especially of machinery for its use, and the competition of French coal and coke. Coke sells at 38 to 45 francs, coal at 43 to 47 francs per ton, a few qualities of each retailing at 50 francs. The following table shows the importation into Geneva and Switzerland for 1878:

		Geneva.	Switzerland.
Coal	kilos..	53, 696, 250	3, 652, 132, 750
Charcoal	do..	2, 802, 500	} 264, 470, 250
Coke and lignite	do..	13, 646, 250	

It is understood that the convention between the great American coal companies limiting the sale at home does not apply abroad, and that the Reading Railroad Company is making a serious attempt to create a market in Southern Europe. So far as Switzerland is concerned, I see no possibility of success.

The sales of anthracite have naturally led to the introduction of American stoves, of which about 300 have been sold the last year. They have given great satisfaction and the sale is steadily increasing. Outside of the great staples I know of no one article of American export which promises better results. The porcelain stove for burning wood, in use in Northern and Central Europe, is probably the best heater of its kind in existence; but wood is becoming scarce and dearer every year, and a good coal stove, particularly for Italy and other parts of Southern Europe, is an urgent want. The American stove for heating apartments and the furnace for large interiors is said to be already what is required. I transcribe a memorandum, furnished by Bates & Co., noting certain adaptations needed in the cooking stove to suit this market:

Cooking stoves should be supplied with a reservoir for hot water with trap. Should have four or five 7 or 8 inch holes, and be of as narrow compass as possible; should be supplied with an easily heated oven, broiling arrangement, and automatic oven-shelf. They should not cost in America over \$19 or \$20 in the smaller sizes, including our commission of 25 per cent., and should sell here for 140 to 150 francs, the freight being about 30 or 40 per cent.

I renew a recommendation made in my annual report that American manufacturers interested should send competent experts to study the requirements of the market on the spot.

LYELL T. ADAMS,
Consul.

UNITED STATES CONSULATE,
Geneva, Switzerland, January 16, 1880.

TRADE AND INDUSTRIES OF THE DISTRICT OF GENEVA.

REPORT BY CONSUL ADAMS.

The signs of returning prosperity in the commerce and trade of this district, noted in my last report, are more than confirmed by the results of the present year. Outside the vine-growing districts the harvests have all been gathered in the best condition, and are of almost unexampled excellence and abundance. The importation of cereals for home consumption, necessary in the best years, will be greatly reduced, and probably covered by the exportation of cattle and dairy products. Here, as everywhere in Europe, though in less degree than nearer the seaboard, the market for all articles of food is affected by the astonishing exportation from the United States, and it is beginning to be felt that the conditions of labor may be seriously modified by the increasing productiveness of American soil. I do not, however, observe here any of the jealousy of American competition reported from Germany and other European States, but rather the feeling that inasmuch as cheap food is a first condition of national prosperity, the overflow from the United States is to be welcomed and not obstructed.

The vintage in Southwestern Switzerland will take place early in October, and promises to be by far the best known for many years. As the old wine in store is very nearly exhausted, and the Rhine wines, with which the whole Swiss wines are to be classed, are far below the average both in quantity and quality, it is certain that the new stock will have a prompt sale at high prices. A great disaster, however, threatens the wine district. In spite of rigid quarantine maintained for several years past, the phylloxera has been discovered at several points in the cantons of Geneva, Vaud, and Neuchâtel. The authorities are acting with great vigor, and insurance societies are forming to distribute the risks, but the pest is approaching from so many different directions that the greatest uneasiness prevails.

Another principal source of revenue here is the multitude of tourists who fill all Switzerland from May to October. The amount of money left in the country this year is greater than ever before, but it is noticed that Geneva has received much less than its former proportion. This is partly explained by the high prices charged at the hotels, partly by the growing popularity of Northern and Eastern Switzerland, and partly by the opening of new lines of communication. I inclose a map of the railway opened on the 4th of September between Belgrade in Ain and Thonon in Haute Savoie, the trunk line of a system of roads building under government direction, all lying in French territory, and to be connected with the projected routes into Italy through the Simplon and Mont Blanc tunnels. As this new system leaves Geneva isolated at the center, great concern is felt as to effects on the trade of the city. There is, however, no doubt that it will greatly add to the activity and wealth

of the surrounding French provinces, and so to the prosperity of Geneva, which is their natural market.

But the city has certainly lost, and is not likely to recover, the importance it had before the formation of the Latin Union as a center for exchanges between the currencies of France, Italy, and Switzerland, and as a resort for tourists. The great banking houses are now a little more than provincial correspondents of foreign establishments. Of the larger hotels two are bankrupt and all suffering; and much the same may be said of the numerous schools, formerly in a flourishing condition.

As I have remarked in a previous report, the Swiss of French Switzerland are a pastoral and agricultural people, who have set up in the larger towns and mountain villages a few special industries, of which the most important are the manufacture of watches and musical boxes. The only exact statistics to be had of the annual production and sale are the returns of the Federal *Bureau de Statistique* compiled from the quarterly bulletins of consular officers of the United States; and these are incomplete, for the reason that much of the exportation, from this district at least, is invoiced elsewhere.

LYELL T. ADAMS,
Consul.

UNITED STATES CONSULATE,
Geneva, Switzerland, September 30, 1880.

AMERICAN FRUIT FOR SWITZERLAND.

REPORT BY COMMERCIAL AGENT DE ZEYK, OF ST. GALL.

I beg leave to bring to the notice of the Department, that besides the divers classes of goods wanted at St. Gall, as spoken of in my last report dated October 9, I would particularly recommend the immediate importation of canned, dried, &c., fruits, which would, I presume, meet with ready sale, owing to the partial failure of the fruit crop in the neighboring cantons; which is still more aggravated by the generally conceded inferior vintage and consequent rise in the prices of wine all over Europe, inducing many farmers and growers of fruit to press it into cider rather than to conserve or dry it for consumption. I understand that rubber shoes and impermeables are in great demand, although there is a branch of the famous shoe business of Mayence established here.

A. J. DE ZEYK,
Commercial Agent.

UNITED STATES CONSULATE,
St. Gall, Switzerland, October 28, 1880.

THE SWISS FACTORY LAW.

REPORT BY CONSUL BYERS, OF ZÜRICH.

There are few or no countries where the experiment of a national factory law has been so complete as in Switzerland.

Some recent investigations as to the working of the Swiss law now add new interest to the whole subject. This law was passed by the Swiss

assembly on the 23d of March, 1877, and was approved by a popular vote of the people in the following October. The law received only a majority of about 10,000 votes out of more than 352,000 votes cast.

It had its basis in article 34 of the Swiss constitution, which declares that the confederacy is authorized to enact laws for protection of life in factories, for prevention of overwork of grown persons, and regulating the employment of children. The experiment was not to be wholly a new one. Certain cantons had, previous to 1877, enacted laws bearing on the management of factories and the duration of the hours of labor; still, when the proposal came to make such regulations national and applicable to the nearly three thousand factories of the country, the greatest opposition sprung up, and prophecies were made of all sorts of future evil likely to follow such a measure.

It is proposed to inquire here whether evil has followed the experiment, or whether the law has not, in fact, proved an advantage to both employer and employed.

This factory law consists of 21 sections, the most noticeable of which are the following:

Section 1 obliges factory owners to report to the local authorities all bodily injuries or deaths occurring in their factories. It is the duty of the latter to investigate the case and report it to the officers of the canton.

Section 5 makes the owners of factories responsible for all damage by reason of injuries or deaths met by their employes while engaged in their line of duty, unless it can be proven that the injury or death resulted from the carelessness of the employe or was occasioned by a higher power.

Section 11 fixes eleven hours as the maximum for work in factories, and these eleven hours must occur between six o'clock in the morning and eight in the evening. During the summer months work may be commenced at five in the morning, ending earlier, of course, than in winter.

Section 16 prohibits the employment in factories of children under fourteen years of age.

Section 18 provides for the appointment of national factory inspectors.

Partial investigations in 1869 showed that the overwork of small children was not uncommon in Switzerland. Nine thousand five hundred and forty children were working in 664 factories. Nearly 500 of these children were not yet even twelve years of age, and all were under sixteen, and most of them girls. In some instances the children were worked *all night*, twelve hours at a time.

Some very incomplete reports have already been made by the national inspectors appointed. The first thing that can be gathered from them is that the law, so far, has not been properly enforced. In all directions children under fourteen are still found in the factories; of course, the number has been greatly reduced. It is believed, however, by philanthropists here that a better execution of the law will remedy this disgrace entirely.

Another noticeable good result of the law is the decrease of deaths and bodily injuries in the factories. It is true that manufacturers have not all obeyed the law, and made the required reports of accidents, fearing the responsibility that would follow. Eleven deaths and 112 injuries have been reported in the year, a small number, apparently, considering the number of persons employed. The result of reporting these accidents is a thorough investigation, and, generally, the immediate adoption of means to prevent their recurrence. All sorts of safety arrangements are rapidly being adopted, such as covers for circular saws,

supports for driving belts, elevators with self-closing doors and catch arrangements, &c.

Many mill-owners have formed a society for preventing *the explosion of boilers*. Competent engineers are paid from the society fund for making frequent inspections of the boilers belonging to members of the society, and for instructing their firemen. A proposal is now on foot to make this inspection of boilers national and obligatory.

The law directs that the amount of damage due injured workmen, or their families, shall be determined by the courts in accordance with the circumstances; and of course these decisions naturally differ in the different localities. However, no immoderate claims have been made, and no extraordinary damages have been allowed. Many manufacturers relieve themselves of responsibility for damages by insuring their employes against accident, in good home companies. There is a movement on foot, too, to induce all manufacturers of the country to organize themselves into a mutual insurance company for this purpose.

At the passage of the law the manufacturers feared that the clause as to responsibility for injuries and deaths might endanger their very existence, as there was no knowing what sort of indemnities local courts might allow. Experience, however, has proved their fears groundless. It has proven, too, that, by the adoption of proper guards as to safety of operations and by reasonable insurance, it is possible for a country to protect the life and health of its working classes without injury to its industrial interests.

As already noticed, certain cantons had years since, and with the most favorable results, legislated as to management of factories, and especially as to the length of the working days. It was proven in these cantons beyond a doubt that as much, if not more, work was obtained from the employes when working eleven hours as when they had worked twelve and thirteen hours. Of course this could only be accounted for on the reasonable presumption, that rested limbs, renewed vigor, and fresh brains were capable of harder work than exhausted minds and bodies are. More rest was needed. Nature would not submit to over straining. Of course there was better health with the shorter hours, and physical and mental advantages innumerable gained. In some cantons mill owners who had opposed the reduction of working hours were convinced by the experiment and joined in urging the federal government to make the law general. Still, as shown, it was adopted only after a great struggle. It had bitter enemies, and most of its enemies remain apparently unconvinced of any good results following the law even to-day. Many of them are perfectly consistent, too, and dreadfully in earnest in their beliefs. Some manufacturers have said to me personally that they would not again invest their capital in mills subject to so much control by others, and where the law prevents men working just as long as they are paid for working. They overlook, however, the fact that section 11 of the law permits them in busy seasons to have the hours temporarily prolonged by the local authorities. They forget, too, that great use is made of this privilege to an extent, in fact, that almost renders the law nugatory in certain localities, and renders the experiment to that extent useless. Had the wishes of the Swiss working classes or the petitions of the greatest workingmen's societies been listened to, the assembly would have reduced the working hours to ten. A compromise was adopted, and like all other compromises it gave no full satisfaction to either party, neither to those who wished short hours nor to those who wished no legislation on the subject.

Owing to bad business, high duties in other countries, &c., many

mill owners feel themselves embarrassed and crippled by the law reducing the hours, as they will not believe that they can produce as much as they could before. The result is petitions from them for an amendment or else an abolishment of the law. The workmen, on the other hand, even where they work by the piece, insist that this is a good law, and demand its more faithful enforcement; further, they demand that the Government of Switzerland shall use its influence to persuade other governments to join in laws protecting the working classes, and especially women and children. It is this last that makes the working of this law especially worthy the attention of Americans.

The time may and ought to soon come when Congress shall be invited to aid the working classes of the country, to an extent at least to put them on equal, relative footing with the capitalists of the country.

I have given the position of this important question as it now stands in Switzerland.

It will be interesting in this connection to read what some of the expert inspectors now report as the result of their official observations of the working of this law.

The inspector of the first district says: "A great weaving house of the canton of Zurich caused the machinery to go a little faster after the introduction of the eleven hours' work-time, and effected the same production as with twelve hours' work. Lately, it reduced the piece wages, and the workmen produced so much more that they received the same average sums a week as before."

One of the greater twisting mills reduced the work-time to ten hours, and the workmen brought it, to the surprise of the manufacturers, to the same (piece wages) per day as before in eleven hours. In the spinning mills they complain of the produce having diminished. It is to be remarked that most spinning mills work with water-power, and that often that does not allow them a quicker working with the machinery.

Here, too, has been observed, however, that by appropriate means an equalizing addition of work can be effected. Many spinning mills pay, besides the piece wages, prizes for productions above a certain average quantity. The prizes amount up to the double pound wages, and the director of a great establishment declared to the factory inspector that by this method the production, that had gone back one-twelfth, had risen again "considerably."

The complaints of the embroidery manufacturers about the decrease of production induced Inspector Schuler to procure for himself from judicious workmen and employers exact statements. One manufacturer accompanied his extracts from his business books with the following words: "If you compare these numbers, you will find that, with a longer work-time, we have gained no better result. In embroidering establishments, where the machines must be moved by hand, the normal work-time is a real blessing to the workmen and by no means a disadvantage to the employer. Men of business, of almost all the districts of St. Gall, spoke to the same effect, several among them with the quiet hint that, in reality, that was their conviction, but that, out of regard for those around them, they dare not always openly express it."

This shows that the legal diminution of the work-time has its principal enemy not in unfavorable *results*, but rather in *prejudice*.

The inspector continues: "The head of another large house lets me know expressly that several years ago an attempt at thirteen hours instead of twelve brought about such a trifling additional production that what was gained by it scarcely covered the additional costs for light." The inspector then points out how, in the embroidery factories

of Switzerland, at least, the close, exhausting work and long hours have been ruining the operatives physically and mentally, and that men look old, act old, and in fact are old and decrepit at the time when most men are in their prime.

The inspector of the second district says: "As much as I have been able to learn in working circles they are on the whole very much for the eleven hours' work, and find that this time suffices perfectly for performing a good day's work, and that a workman who has worked during eleven hours diligently and conscientiously may well leave off working. Those especially value this reasonably moderate work who have, perhaps, a little garden, or who particularly care for the education of their children, or else wish to occupy themselves with all sorts of household affairs, such as cutting wood, &c., after their day's work."

A great number of manufacturers, directors, and managers of establishments, where formerly the twelve hours' work had been in use, assured me that the fear that in consequence of the reduction of time a decrease of production might take place had been unfounded, since now in eleven work-hours no less was produced than formerly in twelve hours; that certainly the control of the workmen was somewhat sharper and less time was lost during the work by short pauses than formerly.

The inspector of the third district does not find himself ready to make report as to the result of the experiments of shorter work-time; he only regrets that, in a great many cases, the legal work-time is not adhered to, and that most of the workmen's complaints are directed to this point. Taken altogether it may be safely asserted that the condition of the working classes, certainly of the working children, of Switzerland, has been vastly improved by this national factory law, and while opinions may honestly differ as to workings of the law in detail, there certainly can be no doubt that a law which tends to lessen accidents, to protect working children, to secure the lowest workingman in his rights, and which increases the physical and mental vigor of workmen and women without lessening their earnings for themselves or their usefulness to their employers must be, so far, at least, a good law and worthy of imitation.

S. H. M. BYERS,

Consul.

UNITED STATES CONSULATE,
Zürich, Switzerland, August 11, 1880.

AMERICAN GOODS IN SWITZERLAND.

REPORT BY CONSUL BYERS, OF ZÜRICH.

As to a market for American articles in Switzerland, there is certainly need enough for many of our manufacturers here. Every one can see that, but to introduce them and sell them and make a profit requires a cleverness not usually met with. All our best articles are imitated in Germany almost as soon as produced at home, and are sold here in Switzerland at lower rates than we can possibly afford. I have known men take certain American sewing-machines, cutlery, &c., on commission, and six months afterwards be compelled to give up the business for the reason that cheap imitations ruined the market.

Many of our articles are imitated in Switzerland itself. There is no

patent law here, and of course no protection. Everything is imitated, from a spade to a telephone, and often sold cheaper than Americans can possibly think of producing and exporting the same or a better article.

Our only hope is to make a *better* article than the imitation, and then to convince strangers that it is better than the imitation bought at home. These well-made articles should be exhibited in industrial museums, and in private shops; they should, without exception, be accompanied by circulars of explanation in the German or French language, and the price stated for delivery in Switzerland.

Models of such articles, with circulars and price-lists, could be sent to our consuls with request to put them in the hands of exhibitors or shop-keepers, soliciting correspondence with the American house. I fear few of our articles will ever be introduced here in any other way. Switzerland being an inland country, and without ports or ships, buys comparatively little from the United States direct, and hence appears to use much less of American manufacture than she really does. But, as I have already pointed out, it has become difficult for a Swiss to tell what articles are genuinely American, and what ones are cheap but tolerable imitations. American canned meats, canned fruits, dried fruits, and smoked hams sell well here. Petroleum exporters might do well to advertise in Swiss papers, as, though large quantities are used, it is seldom bought direct from the United States. Walnut wood for furniture is extraordinarily scarce and dear here. I see no reason why we might not introduce hard woods here as we have done in Paris. American wheat has, within a few years, been rapidly gaining ground in Switzerland, and our supplying the Swiss demand, in part, is a question of freights only. Heavy agricultural implements cannot be sold to any great extent here; the farms are small, and the farmers too poor or too much in debt to buy them. American fruit-drying ovens have been tested here, officially, lately, and have met with warm approval.

In spite of depressed business and hard times, the city of Zürich has put up a greater number of fine houses within three or four years than any other city on the Continent. These buildings are all of granite, and of the most substantial character. Whole streets have been filled up, and a complete transformation of the city has taken place. One of the latest signs of enterprise here is the successful introduction of the Bell telephone into many business houses on the central or district system.

Accompanying this I hand you lists showing the totals of exportations hence to the United States during the last two years:

	Silk.	Straw.	Miscellaneous.
	<i>France.</i>	<i>France.</i>	<i>France.</i>
Total in 1878	19,848,888.06	847,389.26	1,384,682.24
Total in 1879	26,189,234.20	1,680,525.10	1,836,774.13
Total during the first nine months of 1880	18,535,366.86	1,290,070.38	1,180,096.00

Total of shipments in 1878	<i>France.</i> 22,679,809.56
Total of shipments in 1879	29,194,693.67
Increase	7,114,824.00

S. H. M. BYERS,
Consul.

UNITED STATES CONSULATE,
Zürich, Switzerland, November 2, 1880.

THE SILK MANUFACTURES OF SWITZERLAND AND OF THE UNITED STATES.

REPORT BY CONSUL BYERS, OF ZURICH.

The silk trade from Switzerland to the United States varies little from year to year. There is an annual average of about ten millions of francs' worth of woven stuffs exported from this district. For a series of years complaints as to profits have been heard, and the present season has been worse than all.

Zurich weaves her silk on the old hand-loom worked in the peasants' houses, and, even with her cheap labor, at a cost of 40 centimes per meter. Great improvements are going on in the machines for weaving silk, and manufacturers are rapidly and radically changing their minds as to what a machine silk-loom is capable of doing. Lyons is throwing aside her hand-loom and adopting the power-loom by the thousand, and already weaves for 12 centimes per meter, and produces 20 meters per day instead of 4 meters as with the old method.

Switzerland is, naturally enough, very uneasy at the prospect, as her peculiar factory laws, so it is claimed, make large factories with machine looms unprofitable. Be this as it may, she is fearing the new Lyons looms. But the question may naturally be asked, Has not Lyons more grounds for fearing the United States, the very birthplace of modern machinery? We import some thirty or forty million dollars' worth of manufactured and raw silk annually. A great part of all this money might be added to the wealth of our home industry. If silk is to be made in the future by machinery, the United States can take the first rank in the world. She has advantages both natural and artificial. The United States can produce machines cheaper and better than they can be produced elsewhere, besides being nearer to the great silk-growers of the world than Europe is. Were she to learn to do all her own throwing, freights, insurance, and commissions would be in her favor also.

It is not necessary to calculate on a continued maintenance of our enormous duty of 60 per cent. on silk stuffs. We can compete with it lowered to a fairer and healthier point. We have, too, the additional reflection that while labor cannot become cheaper in Europe it cannot become much dearer in the United States. What does this all point to but a transfer—a very gradual one, it may be—of the silk industry to our own side of the sea? Mere pooh-poohing by European manufacturers will not prevent it. They pooh-poohed about watches, iron, printing, engraving, photography, binding, and a hundred other things; and while they were pooh-poohing, the business was slipping out of their hands. The dangers to silk manufacturing are the sudden changes of fashion. An article employing every loom to-day may be lying on the shelf unsold to-morrow. The business is a lottery, in its way, and so long as New York depends on Paris for her mode, so long will American silk-weavers work at a certain disadvantage.

American silk manufacturers must introduce artists of genius into the business and produce modes of their own. They must stop being imitators only, and originate articles finer, more tasteful, and cheaper than the imported ones. American women have better taste than European women have, and if they have relied wholly on Paris in the past it was largely because we have had no competent inventors of dress and its belongings at home. Our opportunity seems to be approaching, if we

only have the skill to seize it. Our factories are already producing *good* silks, but they must produce *stylish* silk as well, and must, by some means, make the style itself. We must import more of the skilled labor of European silk centers—dyers, finishers, throwers. We dare not expect them for European wages. We must pay them so well that others shall be induced to come, and that thousands of our own people, seeing reward in it, will learn the industry themselves. A school should be opened wherein the whole technic of throwing, weaving, dyeing, finishing, &c., should be taught. A cocoonery should be connected with the establishment, and the methods of feeding, propagating, and caring for the worms be practiced. This school should be free to persons pledging themselves to enter the pursuit of manufacturing or producing silk.

It is said in Europe, "Americans produce no silk, because they don't know how." This is, in a great measure, the truth; but it is, at the same time, a silent admission that nothing but ignorance of means prevents our competing. Our ignorance can be overcome, and our natural advantages will yet be made use of. If, with experience and all our advantages, we cannot take our share of the silk manufacturing from the Old World, we do not deserve it. It would be proof that the industry is alien to our people and never to be acquired.

If we are to reach after this new industry in good earnest, we should, at the same time, take immediate and strong steps for growing the raw material. Silk culture must not be left to a southern farmer here and there to experiment on without knowledge, without capital, and without even a knowledge that his cocoons will bring him a fair market value. Cocoon-growing should be formally and strongly encouraged. The question as to whether our climate and soil and foliage are adapted to the feeding of silk-worms has been settled in our favor long ago. What is wanted now is to direct labor and capital to the business. A society should be organized offering large premiums for the most cocoons, for the best cocoons, for the largest plantations of trees, for the best methods adapted to our situation, and a certain good price guaranteed for all cocoons produced by parties striving for prizes. We have thousands of square miles in California and the Southwest as suitable for cocoon-growing as are the plains of Lombardy. Properly directed energy and the giving of a liberal amount of money in prizes would secure occupation to thousands and a new wealth to the country.

The producing and manufacturing of silk is worth hundreds of millions of dollars to the half dozen or so countries engaged in it. Cheap lands can change the place of culture, and modern machines are revolutionizing the methods of manufacture.

There is a "new deal" taking place with this industry, and Americans can have a full hand if they will.

S. H. M. BYERS,
Consul.

UNITED STATES CONSULATE,
Zurich, Switzerland, November 2, 1880.

THE LOCUST-EGG-DESTROYING GRUB.

REPORT BY CONSUL-GENERAL HEAP, OF CONSTANTINOPLE.

The ravages of the locusts in several provinces of Asiatic Turkey have contributed in no small degree to increase the misery of the inhab-

itants of those regions, already so severely tried by the disastrous war with Russia. Edicts, proclamations, and orders have all been in vain, nor have the rewards offered for the destruction of this fatal insect been of any avail. It increased, multiplied, and continued its ravages until in some provinces neither leaf nor blade was left for the starving people or their cattle; famine ensued, and in its train came typhus and other epidemics.

I am not aware of the identity of the locust of Africa and Asia with that of the United States, but believe that the former is much the largest. I am therefore unable to venture an opinion as to whether the parasite or grub, which has appeared in these regions, and which, feeding on the egg of the locust, has been found to reduce its numbers very appreciably, will do the same with those of the American locust. It is believed here that this grub, which is the larva of a moth or fly, will eventually extirpate the locust and then disappear, unless it finds another element.

Hearing of this grub from various quarters, but more particularly from the United States consular agent at the Dardanelles, I requested him to make a circumstantial report on the subject, and to send with it specimens of the male and female locust, and of its eggs, as well as of the grub, and I have now the pleasure of transmitting a copy of Mr. Frank Calvert's report, and two small boxes of specimens in a separate parcel.

Upon investigation it may be found that either the locust of this region is of a different species from ours, and that the grub will not feed on the eggs of the American locust, or that the grub itself and its habits are already known in the United States. I, however, transmit this information for what it may be worth in the hope that it may be found useful.

I requested Mr. Calvert to send me some specimens of the moth or fly produced by the larva or grub, but suppose he could find none at this season.

Should a large quantity of the "locust-egg destroyer" be desired for experiment, they can be collected at any time between now and the end of March next, and if notified in time I can send them by steamer, via Liverpool, to reach New York before the end of winter.

G. H. HEAP,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Constantinople, Turkey, October 13, 1880.

LOCUST EGG-DESTROYING GRUB.

[Report by Consular Agent Calvert, of Dardanelles, transmitted to the Department by Consul-General Heap, of Constantinople.]

I have the honor to inclose herewith a report on the locust, and on an insect that destroys its eggs in an extraordinary manner. The rapid development of the locust-egg destroyer gives great hopes that the scourge which ravages Asia Minor will be greatly lessened, if not completely eradicated, through its agency. To accompany the report I send, by post, a parcel to your address, inclosing two small boxes.* The one contains the male and female locust, the other the eggs of the locust and the destroyer insect, which has actually reached its full larva growth and is now changing to the pupa state. It is to be presumed the perfect insect will not be developed until the spring, when the locust makes its appearance. If the introduction and naturali-

*Sent to the Department of Agriculture by the Department of State.

zation of the locust-egg destroyer in the United States be possible, it will prove an immense boon to the agriculturist.

The experiment will be worth trying to ascertain if the locust of the United States be as vulnerable to the attacks of the destroyer as it is to its Turkey co-genus. The best time for the removal and transfer of the locust-egg destroyer is from the present (October) up to the end of March.

I have the honor to be, very respectfully, sir, your obedient servant,
FRANK CALVERT,
Consular Agent.

REPORT ON THE LOCUST AND ITS EGG DESTROYER.

From remote times the locust has been a scourge to Asia Minor. The country is never quite free of the insect, which is always present in greater or lesser numbers. The ravages of the locust are so extensive as to cause occasionally a depreciation in the value of land of as much as 80 per cent. The female locust deposits its eggs, by preference, on hill country in arid, uncultivated soils, never in lands under cultivation. A fluid is secreted by the locust, which, softening the hard soil, enables the insect to work in the lower extremity of its body to the depth of about an inch below the surface. The eggs, thirty to forty in number, are then deposited, bodily enveloped in a thin membrane, in the form of a slightly curved cylinder, about seven-eighths of an inch in length; the liquid hardens the coating earth as it dries, and forms a case or cyst around the membrane, which protects the eggs from the inclemency of the weather. The eggs are collected occasionally by the forced contribution of a certain quantity per head of the population. The genial warmth of spring hatches the egg (the vitality of which is not affected by fifteen degrees of frost, as was experienced last winter). The locust is then of the size of an ant; it feeds by day and towards evening congregates in masses to disperse again with the warmth of the sun. This is the stage when the greatest efforts are made for the destruction of the locust, but so widespread is the evil, the expanse of infected country so vast in comparison to the scanty population, that no sensible diminution of the quantity is felt. As the locust increases in size it commences to travel; even before its wings are developed it is very destructive to all green crops and grass; it is not to be arrested in its march by rivers which are traversed, the drowned bodies forming a bridge for the rear to pass over. When the locust is full grown, the flight is commenced with a prevailing direction to the north. In the heat of the sun from ten in the morning to four in the afternoon the locust is on the wing, resting at intervals; the crops of grain that unfortunately lie in its way are devoured in an incredibly short space of time, and trees are stripped of their leaves. The locust, if not kept out of the house, it is destructive to clothes, cotton goods, and especially all starched articles. When the sky is overcast or there is rain, the locust is inactive. The eggs laid, the locusts gradually die off, covering the ground with their dead bodies.

A remarkable feature in the natural history of the locusts is the appearance of a larva that feeds on the eggs of this insect. Strange to observe, the presence of the destroyer's larva cannot be traced back, neither to former visitations of the locust, nor even to last year, when it is presumed the destroyer was present, though in a lesser number than now. Not more than one grub is found in a locust cyst of eggs; it does not pass from one cyst to another, nor is there any visible perforation or outward sign that distinguishes the presence of the larva in the cyst. The question arises how the larva is introduced to the locust egg; a probable solution is the egg of the destroyer is laid in the body of the locust previous to the deposition of its own eggs. To this conjecture weight is given by the fact that many persons observed the presence, in great numbers, of a small moth or fly that accompanied the locust in its flight, possibly an ichneumon fly, some of the species of which are known to kill large grasshoppers, to bury the body and lay its eggs therein; others to lay their eggs in the bodies of live insects. The egg of the locust destroyer, to all appearances, is hatched in the cyst, the larva feeds on the locust eggs, and by the time it has consumed them reaches the full size, to change to the pupa state amid the dried skins of the locust eggs which are rejected as food. The full development will be watched with great interest.

To convey some idea of the extent of the services the locust destroyer has rendered to the agriculturist for the coming year, I can state that I have dug up a number of cysts, say from 50 to 500 to the square foot, in different localities, and found them to contain the larva from the high average of 90 per cent. of the cysts to a minimum of 8 per cent. No locality I examined was free from the destroyer. The study of this interesting insect and of its future influence in moderating, if not eradicating, the scourge of the locust, is well worthy of attention.

FRANK CALVERT,
Consular Agent.

DARDANELLES, October 5, 1880.

POLYNESIA.

THE SUGAR INDUSTRY OF THE FIJI ISLANDS.

REPORT BY COMMERCIAL AGENT LASAR, OF LEVUKA, ON THE SUGAR INDUSTRY OF FIJI AND ON THE DEVELOPMENT OF TRADE WITH THE UNITED STATES.

In compliance with the requirements of the Department to communicate everything of interest to the United States, more particularly that of a commercial character, it is made my duty, as a consular officer, to call the attention of the department, and through it that of the commercial public of our country, to the rapidly increasing interest by the people of Fiji in the planting of sugar cane, and the preparation of its juice for the market.

Already there are some five mills in operation, nearly all of considerable capacity, and to prove how many more might be worked to advantage, I have but to add that three of them are within the space of two miles. Quite recently, say within two or three months, the very complete machinery of another has arrived, to be erected on the extensive sugar plantation of Dr. Chalmers, R. N., in a district called "Tai Levu," on the island of "Viti Levu," the same on which the three mills spoken of are situated. It is of such dimensions as to have been the sole cargo of a bark of no inconsiderable burden. From the same manufacturing city, Glasgow, another is on the way to this same island, to be brought hither by an American three-masted schooner—I believe the *Quickstep*—and is expected here by the middle of November. It is to be put up on the plantation of a Mr. Stanlake Lee, a gentleman full of enthusiasm in behalf of the planting of the sugar cane in Fiji.

THE COLONIAL SUGAR REFINERY COMPANY.

This company, with its headquarters in Sydney, well known as largely engaged in the manufacture of sugar, and desirous of extending its operations, is purposing and now preparing to do a great work here in the production of this article. Its representatives having visited the colony but a few months since, they have already contracted with all the cane-growing planters of the Rewa district. I say, with all of them, as from inquiries made I could learn but of a single exception—one who has his own mill to crush the cane grown on his plantation.

This company, said to possess considerable wealth, has held out most liberal inducements to the planters. Among other advantages, the contract entered into contains a stipulation which enables the planters to dispense with a large amount of labor, inconvenience, delay, and expense to which they have been hitherto subjected in dealing with the Rewa Plantation Company, the only mill thus far calculated to do any amount of business.

Again, the company has agreed to receive the cane from the planters at their own landing by their (the company's) punts and steam-tugs, thus reducing, nay in fact cutting off altogether, the by no means inconsiderable cost of bringing the cane to the mill, the expense of owning, keeping afloat, and manning their own punts.

The company not only agree to purchase their cane at a higher price at

the landing than they have received at the mill, and be spared all the labor, &c., of punting it, &c., but it is also made a proviso of the agreement that if, and whenever, the other mills raise the price of the cane, the company will increase it at a like ratio from the high price agreed to at the start.

Busily engaged as they are, they bid fair exclusively to occupy the ground in buying up all the cane raised on the Rewa for the manufacture of sugar, of an article, too, of the best and most refined quality, as they intend erecting a refinery as well; and to judge from their manufactures in other places it cannot be denied that a superior quality will be produced for the foreign market, as it is a fact established by connoisseurs that the sugar grown in the Rewa district is not behind that of any other country. Their enterprise will afford employment, too, to a large number of laborers, and in this way will prove a boon to Fiji. They offer a higher price for the cane than ever before offered. They purchase it at 10 shillings sterling or \$2.40 per ton of cane regardless of density, while the Rewa Plantation Company pay considerably less at the mill, the planters besides incurring the not immaterial cost of punting or bringing it to the mill.

It cannot be questioned but that the planting of sugar cane is of vast importance in these islands, destined to be the great, probably the most profitable, interest for Fiji.

THE REWA DISTRICT.

It is an extent of land, mostly bottom land, though beautifully elevated above the river from which it derives its name, and is highly adapted to the raising of sugar cane. This river is situated on the largest island of this group, the Big Land, Big Fiji, or, as it is called in Fijian, "Viti Levu," closed in by most delightful banks. It winds its way through a charming country nearly the entire length of the island, undisturbed by miasmatic swamps, and is habitable throughout. Its waters are navigable by small steamers, say of three or four feet draught, at some 60 miles from its mouth presenting a large body of water, with scarcely a rapid or any other obstruction to interfere with its navigation. From ten to fifteen miles above its mouth you find excellent drinking water. This river is remarkable not only by reason of so large a body of fresh water on an island not more than 60 by 100 miles, but in respect of beauty I question whether anywhere on this globe a river adorned by such banks may be found, or one to exceed it. Its banks are beheld stretching along some few feet above the water, miles upon miles, affording the handsomest sites for villas. In fact, sailing or steaming through it or any of its many delightful tributaries, such as the Waimanu, the Wainibokasi, you fancy yourself in some fairy land, of which you have read in earliest days of boyhood. An atmosphere as is that of Fiji in every part, totally devoid of any malarious influences, a clear azure sky above you, and lands far and near, every foot of which is but waiting for the inroads of the cultivator, indisputably adapted to the growing of the cane.

This Rewa district, however, with its marked adaptation to that crop, is not confined simply to the charming banks of the river. Upon hills apparently inaccessible to the plow or cultivator, I have seen the cane flourish and finely prosper. I have been told by those fully competent and reliable as to any information they communicate, that those steep ascents, those miniature mountains, produce a most superior cane, a cane of high density, and that, too, for years in succession. Thus far the Rewa district seems to be the largest and richest tract of land in

Fiji, more particularly for the cultivation of the cane, although there are some four or five other isles in this archipelago, as, for instance, Taviurie, Vanua Balavu, Kadavu, &c., which admit of profitable culture, and are yielding large returns for the time and labor spent. Yet I seriously doubt whether among the two hundred islands constituting this cluster of isles there is any portion that will finally prove of such high value and profit as this district, or will at all compare with it, having already contributed a very large portion of the revenue.

There is another river on this same island of Viti Levu, of nearly the same length with the Rewa, by the side and in the vicinity of which large tracts of flat sugar lands in a dry belt of country are found, uninclosed by any barrier of reef. Thus far, however, its lands have not come into market or notice; its resources, undeveloped, will in time enable it to become one of the most profitable districts of Fiji. I refer to the Siga Toka River.

There are also some sugar lands on the north side of Vanua Levu, more particularly on the banks of the Dreketi and Lambasi Rivers.

The Rewa district is already attracting considerable attention in sugar-raising circles abroad, so much so that for some purpose best known to the interrogator, a member of our consular staff sent me a number of interrogatories regarding "the cultivation of sugar cane and the manufacture of sugar at the Fiji Islands, more particularly in relation to a certain part of one of the islands of the group known as the Rewa River bottom." Undoubtedly, this tract of land has a great future, destined largely to contribute to the revenue.

On a short visit to these valuable lands on the beautiful banks of the Rewa I gathered the following details in regard to the quality and quantity of sugar raised on the plantations in that district. Sugar seems to be the great staple finally to prevail in this colony, while, by one cause or another, other crops, as, for instance, cotton, have either completely or partially failed to return an adequate reward for money, time, and labor spent upon them. In giving these data I have reference simply to the mill of the Rewa Plantation Company, the owners of which are the proprietors of an extensive plantation. They lately published the annual results of their manufacture of sugar and rum. They are the oldest and the largest establishment both as to acreage owned and the amount of sugar manufactured. Besides their own cane they crush largely for the different planters around, as the other two mills in operation have not yet commenced doing much, one of them being designed simply for the planter's own use, while the other is limited in its capacity.

SUGAR MANUFACTURE IN THE REWA DISTRICT.

The net weight of cane crushed at the mill of the Rewa Plantation Company for fourteen planters was 9,364 tons, at a cost of \$15,102.06, which includes 12 cents per ton for punting the cane to the mill, and another 12 cents for use of punt, making the cost of sugar \$2.24 per ton. The average density of the sugar for the year from July 1, 1879, to June 30, 1880, is 8.227, and I may add, that the company attribute the low density to the very wet weather that prevailed upon the Rewa, almost without intermission during the entire year, and to a severe gale on the 11th of December last, which so beat down the crops as to prevent the canes rising again. To guard against heavier loss by rot the fields were reaped, and the cane crushed in great measure unripe.

RESULTS OF CRUSHING.

Total juice expressed at this mill during the year, as above, was 1,153,000 gallons. The juice per ton of cane was 123 gallons, and 2,339

gallons per ton of sugar. Cane per ton of sugar, 19 tons. The total of molasses made, 19,729 gallons. Molasses, 40 gallons to the ton of sugar.

Weights and grades of sugar.—They realized 492 tons 3 cwt. of sugar, of which 345 tons were of the first grade, 97 tons of the second, and 50 of the third.

Rum.—The quantity distilled during the year was 15,672 gallons, and, after deducting for evaporation and coloring 912.5 gallons, the amount of net proof gallons of spirits, after the process of thus coloring and casking, was 14,759.5 gallons. The set at average of 10° material in distillation, 220,000 gallons of wash were used, and the proportion of wash to rum was as 15 to 1 gallon of proof. When giving the setting of wash averages of 10° material in distillation it must be borne in mind that the alterations vary from 7 to 1, according to the state of the weather, &c.

GENERAL DATA.

Like the preceding, these data comprise the results arrived at by an accountant in every way reliable.

The average production of cane to the acre in the Rewa district is about 35 tons. It takes plants fourteen months to mature, while ratoons (plants from which one or more crops have been cut) are said to stand and bear for six and seven years. This company expects to produce crops from ratoons for as many as eleven years.

PRICE OF LAND ON THE REWA.

A question most probably to be asked, and properly too—What is the price of land in the Rewa district, a country so highly encouraging to the planters of cane, and indeed so full of hope to that interest? I answer, it will be found rather difficult at the present time to purchase a single acre in this country for many reasons, the foremost of which are that the titles to lands in Fiji are to a great extent still unsettled, the investigation of the claims to them by the different owners not yet having been concluded, and the rapid progress of the sugar interest on Viti Levu, in connection with which I must mention the near approach of the establishment of the Colonial Sugar Refinery Company on these banks already referred to.

Every owner of land, if of but ever so small a tract, is standing out for the best market, although, hereafter, when the titles of land will have been quieted and the present excitement pretty well subsided, I doubt not that land may be purchased at a far lower figure than that at which it is offered or hinted at at present.

DURATION OF PLANTS.

Another query evidently of great import—What is the duration of plants on the plantations in this sugar-growing district, every acre of which, so remarkably adapted to the raising of sugar cane, will sooner or later be devoted to that staple? The planters tell me that, generally speaking, the ratoons hold out for six years, but that they have been known to produce crops for as many as eleven years.

IRRIGATION—IS IT REQUIRED?

Another question not to be disregarded in tropical countries is that of a sufficiency or want of rain or moisture. Or, is irrigation required?

From my own observation I would answer in the affirmative; at any rate, it will sooner or later, and no doubt be applied to high advantage. However, there is an abundance of deep water in the river for more than sixty miles from its mouth. The cane may be shipped at almost any point of the river bank. Certainly a wonderful phenomenon, a river containing a body of fresh water of more than 50 miles in length on a coast-bound island, the entire area of which does not exceed 6,000 square miles.

The lands on the banks are said to be ten chains wide, while a large portion of the hill country is already, and more may yet be, planted in cane.

TRADE WITH THE UNITED STATES.

In conclusion, I cannot but give expression to a wish long cherished, to see a regular trade opened up and carried on between these islands and the United States, say San Francisco. Thus far, it is altogether one-sided. Two or three vessels of moderate size coming here once a year laden with timber from our richly-tufted forests of Oregon and Washington Territory, discharging their outward cargo here, but no homeward in return. They are obliged either to return in ballast or cruise about among the Line Islands, picking up what copra or other marketable articles they can in the way of trade or exchange with the natives; that is, if the skipper be a shrewd dealer, possessing the knack of turning over a cent a good many times, for the aborigines of the South Pacific are a cunning set, and seem to find pleasure in cheating Europeans.

In view of the preceding, may I not hope to see this my wish speedily realized, perhaps sooner than I imagine? May not sugar—the subject of this very report, not one word of which is exaggerated—find an avenue to our markets, and thus prepare the way for other cargoes of an inward character? Indisputably, Fiji has a commercial future with the sugar cane as its pre-eminent staple.

The planters of these islands do not appear very sanguine as to the culture of any other crop, except it be the planting of cocoanut trees, and the gathering of the nuts, drying the kernel for the European market—copra. Cocoanut trees, however, thrive only on the sea-coast. I say for the European market, because, while a goodly number of ships, mostly of German nationality, carry large cargoes of copra from here to different ports of Europe, none of our American vessels seem to engage in this trade. One commendable exception, Mr. Andrew Crawford, of San Francisco, seems interested in the article. His vessel, the *J. W. Seaver*, Capt. D. B. Hawes commanding, left this port lately with a large lot of it, and was to receive more in the Line Islands, for the owner's soap factory.

Perhaps I may be met with the objection that the heavy duties on sugar in our country prevent shippers from engaging in the introduction of that raised in Fiji. Whether true or false, Fiji sugar is an article unquestionably of a quality to compete in any market with the first brands of other countries. One hundred and thirty thousand dollars' worth was exported during the year ending the 30th of June last, nearly all of which was consigned to Auckland and Melbourne.

HENRY S. LASAR,
Commercial Agent.

UNITED STATES COMMERCIAL AGENCY.

Levuka, Fiji, September 30, 1880.

COMMERCE AND PRODUCTS OF SAMOA—TRADE WITH THE UNITED STATES.

REPORT OF CONSUL DAWSON.

AGRICULTURE.

In regard to the agricultural and commercial condition of the Samoan Islands, I have the honor to state that there are under cultivation at the present time about 5,000 acres of land, nearly all on the island of Upolu. The successors of J. C. Godeffroy & Son have 4,500 acres of this in their plantations in corn, cotton, cocoanuts, and breadfruit. They also grow small quantities of sugar cane and coffee, but none to export, which is also the case with corn. When the land is cleared of the forest, corn is first planted with cotton and cocoanut trees between the rows. The corn crop is used for island consumption till the cotton comes on, and this is utilized till the cocoanuts shade the ground and begin to bear, which they do in about seven years. Then the cotton bushes are cleared away and herds of cattle feed on the succulent grass that springs up in the cocoanut groves.

The cotton export from this port this year will reach 2,500,000 pounds, of which about 600,000 is Sea Island and goes to Alsace-Lorraine for silk manufacture. The balance is Kidney, and goes to Saxony. The cocoanuts will yield about 3,000 tons of copra this year, or about 1,000 tons in excess of any previous year, the usual quantity being about 2,000 tons annually.

For the cultivation of their plantations the Germans have 1,600 laborers from the Line Islands, New Britain, New Hebrides, and elsewhere. The total number of laborers now in Samoa, from other islands, is 1,800. They come here on contract time, usually from four to five years, at \$2 per month, the greater part of which they get in trade, and seldom go home richer than they came.

I have mentioned before the general fertility of the soil of the Samoan Islands, and that almost every kind of vegetable will grow here. But there are no such level tracts of land here for sugar cane as in the Hawaiian Islands, while the ground is so stony that the use of a plow, cultivator, or scythe is unknown. All work is performed by manual labor.

TRADE WITH THE UNITED STATES.

The total value of exports from this port to San Francisco, since the beginning of 1875, is set forth in the accompanying table marked A, by which it will be seen that the largest amount was in 1877, when the San Francisco market was tried with fungus and copra; but as there are only two firms in that city who buy copra, and as they usually want it at the prices paid to natives here, it is of course impossible to send it there, and hardly any now goes to that market. The ordinary price of copra here is 2 cents per pound, cash, and from 2½ to 2¾ cents in trade, while in Sydney it is worth 4 cents per pound, and in London and Hamburg 5 cents.

The total value of the imports in lumber and provisions, &c., from San Francisco to Apia since the beginning of 1875 is set forth in the accompanying table marked B, and shows the imports to be \$322,061.70

as against \$75,628 74 in exports, or a balance in favor of the San Francisco market of \$246,432.96. Since the arrival of the first vessel (two years ago yesterday) after my landing here the imports from San Francisco have been \$136,096.66 as against \$185,965.04 for three years and eight months previous to my coming; in other words, the monthly average of imports from San Francisco since my arrival has been \$5,670.69 as against \$4,226.47 previous to my coming, an average monthly increase of \$1,444.22.

The great obstacle in the way of commerce between these islands and the United States is the want of exchange. Some Germans have imported \$2,000,000 in Chilean, Bolivian, and Peruvian coins, which compose the currency of Samoa, and which bring at the mint in San Francisco 82 cents on the dollar. They pass here at par, and when a cargo is brought from San Francisco here and exchanged for this depreciated coin the prices must be exorbitantly high, such as cannot always be realized, to cover the discount of 18 cents on the dollar in the former market. As bills on London, at 5 per cent., cannot be obtained with any certainty (many that have been obtained during the past year have been returned dishonored) it has been very discouraging to San Francisco merchants to carry on trade with this port. As a cargo of copra will not bring in San Francisco, at the prices offered there, half the value of the cargo of goods and provisions brought here, there is but little encouragement for this kind of exchange. It is to be hoped, however, that some more reliable coin may be adopted as the standard currency of Samoa in the not far off future.

THOMAS M. DAWSON, *Consul.*

UNITED STATES CONSULATE,
Apia, Samoa, September 18, 1880.

A.—Value of exports in fungus, cocoanuts, copra, Chile peppers, limes, lime juice, bêche de mer, and sharks' fins from Apia to San Francisco.

1875	\$17,598 00
1876	6,813 40
1877	25,867 50
1878	9,648 52
1879	5,508 52
1880 to September 15	10,174 50
Total	75,610 74

B.—Imports from San Francisco to Apia, 1875-1880.

Date.	Vessels.	Cargoes.	Consigned to J. C. Goddard, Fry & Son.	Consigned to D. S. Parker.	Consigned to Krug, Heide- man & Co.	Consigned to miscellaneous.	Total values.
1875	5	Lumber and provisions.	\$13,209 75	\$13,226 61	\$8,872 63	\$9,650 00	\$44,958 99
1876	6	do	19,461 01	\$2,807 50	8,493 30		60,761 81
1877	8	do	23,450 80	17,826 80	13,369 77	3,423 13	58,070 50
1878	5	do	40,033 68	17,498 71			57,532 39
1879	6	do	31,475 90	13,933 92		9,308 12	54,717 94
1880, to September 15	5	do	9,148 83	11,579 66		25,291 58	46,020 07
5 years 8½ months	35		136,779 97	106,873 20	30,735 70	47,672 83	322,061 70

NOTES.

(ARRANGED BY COUNTRIES ALPHABETICALLY.)

As the Department of State desires to distribute such commercial publications as lie within its province where they will do the most good, the names of all organizations (commercial, agricultural, mining, manufacturing, in fine, all societies or bodies whose aim is the development of our foreign trade and industrial resources), and the addresses of their officers, should be sent to the Secretary of State at the earliest moment. Bodies or individuals receiving this will aid in the good work by drawing the attention of the proper parties in their respective cities or districts to this request, or, better, by securing and forwarding the names and addresses direct.

COMMERCIAL RELATIONS FOR 1879.—The letter of the Secretary of State, entitled "Commerce of the World and share of the United States therein," which was recently issued in pamphlet form and distributed among the commercial organizations and leading business men of the country, will be found in its proper place in volume 1 of *Commercial Relations for 1879*. "*Commercial Relations for 1879*" is both unusually large and interesting, being published in two volumes—volume 1 embracing the Secretary's review of the world's trade and the consular reports of Africa, America, Asia, and Australasia; volume 2 embracing the reports for Europe and Polynesia, and the Supplement. The reports contained in the supplement treat on special subjects, while those in the body of the volumes treat of the regular annual commerce of the several districts. Among the reports in the supplement may be mentioned, as of very special value, the following: Meteorological reports; butter-making, Denmark; cultivation of the sugar-cane in China; the manufacture of matting in China, from the planting of the grass to the weaving thereof; industries and manufactures of Lyons, France; the German tariff; beet-root sugar industry in Germany, and the best means of introducing the same into the United States; technical education in Germany; iron industry of the north of England; the land question, patent laws, and post-office savings-banks of England; the Irish land question; American flower and vegetable seeds in Italy; cultivation of wheat-straw and manufacture of straw goods in Tuscany; how American patrons of art are defrauded in Italy; borax as a substitute for salt for the preservation of butter; production and consumption of salt in Italy; steel rails in Italy; tariffs of Italy, general and special; tariff and contraband laws of Mexico; trade and commerce of St. Paul de Loanda; grain trade, manufactures, habits, and customs of the merchants, landed proprietors, and working classes, &c., of South Russia; export trade of Switzerland with the United States.

The provisions made by Congress at its recent session for the publication of consular reports as often as the Department of State deems necessary, will relieve the annual volumes of *Commercial Relations* of all reports not strictly annual reports.

Boards of trade, chambers of commerce, and all bodies or individuals interested in our export or import trade, who desire copies of *Commercial Relations* should apply to their Congressional representatives—members of the House or Senate—who are allowed a certain number by

law for distribution, or to the Department of State, which has a very limited number, and which it desires to distribute to the very best advantage.

BERMUDA.

Trade of Bermuda.—Consul Allen, in transmitting his annual report, dated November 8, 1880, showing the trade of Bermuda with the several countries, writes as follows concerning the trade between that colony and the United States:

Since my last report there has been but little change in the commercial relations of this colony with the United States, although much effort has been made by our manufacturers and merchants to increase their trade in these islands. The total imports of the colony during 1879 amounted to \$1,193,000, of which amount \$775,000 were from the United States. The total exports from the colony during the same year amounted to \$336,000, of which \$283,000 went to the United States. The exports to the United States during the year 1880, up to the date of the consul's writing, amounted to over \$345,000, the largest export of any single year. During the summer just past a monthly line of steamers was established to run between London, Bermuda, and Nassau, which, if continued, will have a tendency to divert some trade from New York to London.

CANADA.

Canada for Canadians.—The Consul at Kingston, Canada, in his annual report for the year ending September 30, 1880, says:

The new tariff and policy of "Canada for Canadians," which was inaugurated by the government now in power for the purpose of keeping Canadians at home, seems to have just the opposite effect. The steadily increasing tide of emigration to the United States, taken in connection with the very expensive government, must in the near future produce some radical change in the Dominion.

CANARY ISLANDS.

Export of Cochineal from the Canary Islands.—Consul Dabney, of Tenerife, under date of September 30, 1880, gives the following statistics concerning the exports of cochineal from the Canary Islands during the fiscal year 1880, which represents the crop of 1879:

This is the great crop for export of these islands, and the one on which all their trade hinges. The price had fallen very low the last year or two, when it suddenly rose last spring 50 per cent., and the demand increased so as to raise the hopes of the cultivators and to stimulate them to increased cultivation. This has been followed by as great a fall, so that the price is quite as low as before, with the probability of its going much lower when the new crop now beginning to go forward shall have reached its markets.

Total export of Cochineal for the fiscal year 1880.

Countries to which exported.	Quantity.	Value.
	<i>Pounds.</i>	
England	2,553,286	\$1,404,307 50
France	920,755	506,415 25
United States	249,126	137,019 30
Germany	166,271	91,449 05
Spain	138,796	76,337 80
Morocco	8,637	4,750 35
Crop of 1878	4,036,671	2,220,279 05
	5,045,007	2,522,503 50
Decrease	1,008,136	302,224 45

Comparison of the exports of Cochineal to the United States from the Canary Islands during the five years 1875-1880.

Years.	Price.	Total weight.	Total value.
		<i>Pounds.</i>	
1875-1876.....	\$0 37½	395,208	\$148,203
1876-1877.....	37½	327,705	122,889
1877-1878.....	45	510,200	229,590
1878-1879.....	59	413,283	206,641
1879-1880.....	55	253,854	137,019

CAPE OF GOOD HOPE.

American trade with the Cape of Good Hope.—Consul Edgeworth, of Cape Town, in his annual report for 1880, makes the following reference in regard to American trade in that colony:

I have consulted the principal importers of American goods here, and they inform me that the present demand is fully supplied, and also that a large quantity is held by the merchants in the eastern province. The Basuto war, which has recently broken out on the eastern frontier, will have a tendency to increase the imports of provisions from the United States. I am told that large quantities of maize have already been ordered by telegraph in anticipation of the demand, but the most of the trade will be transacted at the eastern ports, viz, Port Elizabeth and East London.

CHINA.

Telegraphs in China.—The Department is in receipt of information from Consul-General Denny, of Shanghai, setting forth that the Emperor has granted the prayer of the viceroy at Tientsin for permission to construct a telegraph line from Shanghai to Tientsin, which when completed will be about 1,200 miles in length. The route will be from Shanghai to Chin Kiang, and thence along the line of the Grand Canal to Tientsin. The viceroy at Nankin also proposes to construct a short line of about 70 miles to connect the capital of his province with the main line at Chin Kiang. The work of setting the poles and laying the wires will be begun early in the spring. It is estimated that the enterprise will cost about \$500,000. Of its advantages to the Chinese Government and people, as well as to foreigners, there can be no question. It is thought that this is the beginning of a new era for China, and that the construction of other telegraph lines and railroads will certainly follow, thus giving to China those facilities for internal and external commerce and communication in which the country is now so sadly deficient.

Imports from the United States at Hankow.—It is a gratifying fact that articles of import from the United States have still held progressive increase as compared with other nationalities. The quicksilver imported is all from America, and although the total is less than the year previous the ratio of reduction in consumption is less than for other metals, all showing a falling off in quantity. In my last two reports I specially commented on the increasing importance of the trade in American cottons, and the table justifies the predictions made of augmenting demand. The year 1877 to 1878 showed a consumption at this port of 18,915 pieces of American sheeting. The following year, from 1878 to 1879, showed an advance to a total of 43,901 pieces, or an increase of 24,986 pieces. The period now reported gives 71,510 pieces as the total consumption, or an increase over the previous year of 27,609 pieces, an advance of 62 per cent. for the year, and an increase

over the trade of two years since of over 270 per cent. This has been accomplished notwithstanding British producers have introduced a similar class of goods to compete with them; but if the integrity in material and manufacture enforced in previous reports is adhered to by American producers they will continue to hold the market and increase sales. Whenever it is for their interest to adopt other styles and classes of goods adapted to the Chinese demands to compete with those now supplied from other countries, the prestige of American sheetings will doubtless give them early and profitable currency.—*Extract from the annual report for 1880 of Consul Shepard.*

American Kerosene in China.—Consul Shepard, of Hankow, in his annual report for the year 1880, writes as follows concerning the increase in the consumption of kerosene in his district: In my last report I noted the extension of the use of burning fluids in the interior of the empire, and especially of kerosene. Its rapid adoption is quite remarkable. Hundreds of retailers in the large cities supply it, and its use is quite general. Not only is this true of this immediate vicinity, but inquiries from missionaries who have made long journeys into the interior give me similar information. The province of Honan is noted for its hostility to foreigners and everything connected with them, and yet kerosene has penetrated there, and my informant assured me that it was much used for lights, and peddlers took it about in buckets, retailing it by cries, in any quantity demanded, from a single gill upward! As a necessary result the quantity demanded is constantly increasing. In my last report I noted the amount imported into Hankow from January 1 to June 30, 1879, as 77,770 gallons. For the same period of 1880 the importation at this port was 216,407 gallons, an increase of nearly 300 per cent. The total import for the year embraced in this report is as follows:

	Gallons.
For first quarter, from July 1 to September 30, 1879	32,430
For second quarter, from October 1 to December 31, 1879	29,950
For third quarter, from January 1 to March 31, 1880	88,200
For fourth quarter, from April 1 to June 30, 1880	128,207
Total	278,787

This trade may be presumed to see continual augmentation until the American supply fails, or until China so develops as to open its own undoubted sources of supply, which geological and mineral formations suggest as existing.

American Clocks and Watches in China.—I have made considerable investigation of the market for American clocks and watches in my jurisdiction, and while, for reasons given, I cannot quote accurate statistics, I am able to report a very large trade, in clocks especially. There is a single house in the business here, of Swiss nationality, and the proprietor has kindly afforded me all the information I have desired. He gives the preference to American watches as being very reliable; but he is not able to push them to any extent on account of their high cost. Even the cheapest are much in advance of very good Swiss articles, which especially meet the native demand. Some very handsome Swiss watches were exhibited to me, in neat white-metal cases, plated in silver to look as handsome and to last as long as the pure metal, good, fair time-keepers, at least for a while, which cost in Switzerland less than \$3.50 each, in a handsome satin-lined morocco case. These morocco cases, it may be remarked, help the sale, and American watches seldom are supplied with them in sending to China.

The same watches are supplied in solid silver cases at less than \$5.50 each. They are in great demand with the natives, and appear, outwardly, as well as American watches at more than twice the cost. Whether our manufacturers can reduce cost so as to compete with them, or whether it is any object for them to secure the trade, are matters for their own solution. If they can, and desire to supply this market, it would be of importance to consult Chinese tastes as to style and to decorations of dials.

As to American clocks, the market is already assured. My information is that a very large sale of these articles, at once good and cheap, is reached every month in the districts under my jurisdiction. It is not a new trade altogether, having been introduced by the Swiss house referred to, several years ago. My informant assured me that at one period he sold on an average over one hundred cases per month, and the demand and supply have still increased and accelerated. But, as in almost everything else, native traders have discovered that they can get them in quantities at Shanghai at some discount, and this trade, like other foreign articles, has passed into their hands and control. For this reason it is impossible for me to gather statistics, or to report more specially on this branch. But it is very certain that a large and growing business is done in American clocks.—*Extract from the annual report for 1880 of Consul Shepard.*

FRANCE.

International Vine-Growers' Congress.—Consul Peixotto, of Lyons, says that an international vine-growers' congress was held in that city on the 12th, 13th, and 14th of September, 1880. Delegates were present from the principal countries of the world, the United States being represented by Mr. Meissner, of Saint Louis, one of the largest vine-growers of Missouri, who read a much-applauded paper on the means employed to resist the phylloxera, and the vines of the United States which resist the pest. The subjects considered by this intelligent body were "Phylloxera of the region," "Actual condition and scientific knowledge of phylloxera," "Means employed for destroying the disease," "History and description of American vines resisting phylloxera," "Adaptability of American vines to different soils," &c. The consul promises a report on the proceedings as soon as the official report thereof is published.

Bordeaux and Burgundy Wines.—The consumption of so-called Bordeaux and Burgundy wines continues to the same extent as when the grapes furnished a more plenteous yield and the present grape malady was unknown, and to meet this regular demand large quantities of Italian and Spanish wines are imported at Rouen and manufactured into French wines. This industry may be regarded as one of the most prosperous of the community. The foreign wines, after undergoing the necessary changes, are sold without exception as French wines for home consumption as well as exportation, and they are manufactured with such skill that it is often difficult to distinguish the difference between the natural and the prepared wine. It is said that the beverage thus prepared does not contain any deleterious ingredient, but this statement is difficult to verify, as the manufacturers do not reveal their secrets.—*From a report by Consul Rhodes, of Rouen, dated September 6, 1880.*

Convention of French Grain dealers.—A convention of grain dealers was held in Lyons on the 29th September, 1880, and adjourned on the eve of the completion of this report.

The principal departments of France, the markets of Paris, Marseilles, Bordeaux, Rouen, Nancy, &c., besides delegates from Alsace-Lorraine, Germany, Hungary, Switzerland, and England, were represented, the assembly numbering upwards of 3,000.

The convention resembled more a grain exchange than a body assembled for deliberation, and considerable business transpired, American red wheat being the favorite for investment and speculation.

Germany appeared as a buyer for rye, but the prices offered and those asked were too far apart, and transactions were insignificant. Discussions were held as to the outcome of the European crop, and the probabilities of how much of the American crop would be needed, and the influence its importations would probably exercise upon prices; Mr. Leon Chotteau, who attended as one of the delegates, at a special meeting, pleading with his usual perspicuity for a Franco-American treaty of commerce. Resolutions favorable were adopted, expressing, however, the conviction that while the present tariff of about 12 cents (60 centimes) per 100 kilos. for wheat was sufficiently low, the actual duty on American flour, which is a little over 23 cents (1.20 francs) per 100 kilos., should be raised, not in the sense of protection, but of living competition.—*Extract from a report from the Lyons Consulate.*

Shipping charges in French ports.—The Consul at Rouen transmits to the Department of State, for the information of shippers, the following communication from the master of the American vessel *The McManemy*, showing the charges paid on the delivery of a cargo of petroleum at Dieppedale, near Rouen:

PARIS, SEINE, October 1, 1880.

DEAR SIR: The following is a correct amount of customs dues and others paid by *The McManemy*, registered 785.39 tons, at Rouen and Dieppedale, tonnage and stevedores excepted:

	Francs.
Customs dues.....	999.25
River and harbor dues.....	512.10
Outward manifest and passport.....	12.50
Medical fee 1, surveyor's fee 40.10.....	41.10
Pilotage inward.....	399.85
Pilotage outward.....	272.00
Total	2,236.80

The following additional on account of petroleum:

	Francs.
Fire guard, 18 days, at 6 francs per day.....	108
Cooking and eating apartments, 14 days, at 4 francs per day.....	72
Fifty per cent. added to broker's bill on account of oil.....	197
Total additional.....	377

If there is an additional charge made by the customs authorities at Dieppedale, it is included in the first charge of 999.25 francs. The items do not appear in my account, which I regret; I would like to have them.

Very respectfully, yours,

GEORGE W. FENNIMORE.

ALBERT RHODES, esq.,
United States Consul.

Canned goods in France.—The special attention of our packers and exporters of canned goods is called to the following interesting and valuable communication:

MR. SECRETARY: By chance a copy of a French newspaper, *Le Soleil*, of September 15, 1880, came into my hands, and my attention was attracted by the item which I

take the liberty of sending you. The matter referred to therein is one of some importance to a certain class of American exporters.

[Translation.]

The director-general of customs has just sent the following circular to the chambers of commerce:

"The attention of the department of commerce has been called to the dangers which might arise to consumers from the use of alimentary conserves put up in cans which have been soldered on the *inside*, or which are made of tin of inferior quality.

"The consulting commissioner of public hygiene, to whom the question has been submitted, is convinced that, as far as the public health is concerned, there are serious objections to permitting the sale of products which, from contact with solder or surfaces covered with an alloy containing lead, might become the cause of poisoning. The commissioner has consequently reported that there is reason to forbid makers of cans for alimentary conserves to solder on the *inside* of such cans, or to employ in their manufacture tin other than that of the very best quality. The commissioner of hygiene has added that, if manufacturers insist upon soldering on the inside of the cans, they ought to be obliged to use pure tin exclusively.

"This report has been adopted by the minister of commerce, and the prefects of the departments have received the necessary instructions.

"It has seemed necessary to adopt similar arrangements respecting canned articles coming from other countries, not only from regard to the public health, but also in order to not place French manufacturers at a disadvantage with their foreign competitors; consequently, the minister of finance has decided, April 2, 1880, that there is reason to exact that cans imported must conform to the regulations in question; that those which do not satisfy the conditions required will be provisionally seized by the service, and notice of such seizure will be immediately sent to the procurer of the republic of the locality.

"In order to permit the French manufacturers to dispose of the stock of cans on hand, it has been agreed that these regulations should take effect only from August 1, 1881. At that date, also, they will be applied to imported cans.

"The directors are requested to call the attention of the service and of the trade to these regulations.

"Le Conseiller d'État, directeur-général.

"AMBAND."

Judging from my experience as an occasional consumer, I am inclined to think that the cans of the meat-canning companies of the United States do not satisfy the requirements of these regulations, and that they would consequently be exposed to seizure at the customs after the 1st of August next.

Your interest in all that pertains to American commerce is the only plea I have to present to excuse this long letter.

Your obedient servant,

THEO. F. GARDNER,

Rue de Livry, Montfermeil, Seine and Oise, France.

December 1, 1880.

Hon. W. M. EVARTS,

Secretary of State, Washington, D. C.

The French Mercantile Marine bill.—The following is a translation of the French mercantile marine bill as passed by the Chamber of Deputies. Up to the date of the publication of this number of these reports, the Department had received no information of the bill having passed the Senate:

ARTICLE 1. The right of free pilotage is granted to all sailing vessels not measuring over 80 tons, and to steamers whose measurement does not exceed 100 tons, whenever they run regularly between port and port, and habitually frequent the entrances to rivers.

Nevertheless, at the request of the chamber of commerce, and after an inquiry in the usual form has been made, the public administrative regulations shall determine the modifications of rules which may be considered necessary in the interest of navigation.

ART. 2. For foreign going vessels the visit of inspection prescribed by article 225 of the Commercial Code for a fresh cargo loaded in France shall not be obligatory unless six months have elapsed since the last inspection, except the vessel may have sustained damage.

ART. 3. For the official documents or *procès verbaux* showing the changes of owners of the ship, either totally or partially, a fixed charge shall be made for registration of 5 francs. Article 5, No. 2, of the law of the 28th February, 1872, is repealed so far as it is contrary to the present provision.

ART. 4. To compensate ship-builders for the charges fixed by the custom-house tariff, the following allowances shall be made to them:

For gross tonnage:

For iron or steel vessels, 60 francs.

For wooden vessels of 200 tons or more, 20 francs.

For wooden vessels of less than 200 tons, 10 francs.

For composite vessels, 40 francs.

For engines placed on board steamers, and for auxiliary apparatus, such as steam-pumps, donkey engines, winches, ventilators worked by machinery, also boilers and connecting pipes, 12 francs per 100 kilog.

Ships planked with timber, having beams and ribs of iron or steel, are to be considered as composite vessels.

ART. 5. Every change in a ship by which an increase in measurement is gained shall give right to a bounty, based on the above tariff, according to the increase of tonnage gained.

A similar bounty shall be granted for driving engines and auxiliary apparatus placed on board after completion of the ship.

On change of boilers, the owner shall be allowed a compensation allowance of 5 francs per 100 kilog. on new boilers without the tubes, if of French make.

ART. 6. The fees granted by articles 4 and 5 shall be paid on delivery of the ship's register by the receiver of customs at the port nearest to the place of construction.

ART. 7. The regulation of admission in bond fixed by article 1 of the law of the 19th May, 1856, and by article 2 of the law of the 17th May, 1879, is abolished.

ART. 8. Ship-builders shall receive allowances for vessels on the stocks at the time when the present law shall come into force, as stipulated in articles 4 and 5, after deducting the amount of customs dues fixed by the conventional tariff on foreign imports which may have been entered in bond for ship-building purposes.

ART. 9. As compensation for charges imposed on the mercantile navy for recruiting and the military navy, a navigation bounty shall be granted, during ten years from the date of publication of this law, to all French vessels, sailing or steam.

This bounty is applicable only to foreign-going vessels.

It is fixed at 1 franc 50 centimes per register ton and per 1,000 miles run for vessels fresh off the stocks, and decreases annually by—

0.075 franc for wooden vessels;

0.075 franc for composite vessels;

0.05 franc for iron vessels.

The bounty is increased by 15 per cent. for steamers built in France according to plans approved of by the marine department.

The number of miles run is calculated according to the distance from the point of departure to the point of arrival, measured on a direct maritime line.

In case of war merchant ships can be requisitioned by the state.

Vessels used for fishing, those belonging to subsidized lines, and yachts, are excepted from receiving a bounty.

Twenty per cent. from the bounty granted by the present law shall be deducted and paid into the "Caisse des Invalides" of the marine, so as to increase the retiring pensions of registered seamen.

ART. 10. Every master of a vessel receiving a bounty fixed by article 9 of the present law shall be obliged to carry, free of charge, mails put under his charge by the post-office authorities, or which he will deliver to their administration, as prescribed in the consular decrees of the 19th Germinal, year X.

If a post-office agent is deputed to accompany the dispatches, he shall also be conveyed free of charge.

ART. 11. A regulation of public administration, containing a special statement of the distances between ports, shall fix the system on which this law shall be applied.

GREAT BRITAIN.

BRITISH EMIGRATION.—The following note from Consul-General Badeau was received too late to enable the Department to make the desired correction in the annual volume of Commercial Relations for 1879, vol. 1, p. 126, in which the report referred to appears:

I have the honor to state, referring to my annual report on trade and navigation for the year ending September 30, 1879, that I have been informed by the Earl of Derby that I was somewhat in error in the statement made by me in that report as to

his declaration of the advisability of emigration from Great Britain to the United States, and that his views are correctly given on page 5 of my pamphlet of extracts from the same report, published by authority of the Department.

I have the honor to forward herewith a copy of that pamphlet marked, and to request that if my report should appear in the annual volume of Commercial Reports of the Department, the correction indicated may be made.

ADAM BADEAU,
Consul-General at London.

JAMAICA, LONG ISLAND,
September 25, 1880.

Objectionable paragraph.

Others recommend wholesale emigration, and so great an authority as the Earl of Derby, one of the most eminent and prudent of British statesmen, has declared that *five millions of people* could profitably seek new homes to their own advantage, and to the relief of those remaining.

Paragraph as corrected.

Others recommend wholesale emigration, and so great an authority as the Earl of Derby, one of the most eminent and prudent of British statesmen, has declared that *large numbers of the farming class* could profitably seek new homes to their own advantage, and to the relief of those remaining.

American art Tiles in England.—Consul Packard, of Liverpool, in a report dated November 18, 1880, concerning the award of the gold medal to an American manufacturer of art pottery at the Royal Manchester, Liverpool, and North Lancashire Agricultural Society's show held at Crew, September 2 to 6, 1880, says:

The society offered a gold medal valued at £10 "for the best collection of art tiles of English or American manufacture, hand painted, impressed or embossed, relieve or intaglio;" second best, society's silver medal. For these prizes Messrs. J. & J. C. Low, of Chelsea, Mass., through their agent, Maj. J. H. Cryer, of Southport, near Liverpool, entered thirteen varieties of art tiles. The gold medal was awarded for Major Cryer's collection over the competing exhibits of tiles from the famous pottery manufacturers of the United Kingdom, including Mintons, Wedgewoods, and the other leading makers.

The council of the society opened the prize for art tiles to competition for American manufacturers at the request of Major Cryer, and it is submitted that, should American makers of other wares desire to compete at future exhibitions, the council of the society might likewise, upon request, include in competition our countrymen.

I have, therefore, to suggest that, should Americans desire to exhibit any improvement in agricultural and dairy implements or other wares before this, the oldest agricultural society in the world, the service of this consulate is tendered to effect this important and desirable opportunity. I inclose herewith the report of the British Trade Journal on the same.

[From the British Trade Journal.]

LOW'S AMERICAN ART TILES.

Maj. J. H. Cryer, of Manchester Road, Southport, exhibited some beautiful examples of American art tiles, and much attention was bestowed upon these choice specimens of transatlantic pottery. The tiles are majolica ware, prepared according to the patent of Messrs. J. & J. C. Low, of Massachusetts, United States, and they possess rare features of excellence which have never yet failed to secure proper appreciation. The patentee has discovered a method of making impressions upon the raw substance in a plastic state, and when these are hardened and glazed the product is complete. Figure subjects, landscape, tree, shrub, flower, or leaf—all can be copied, and that with a delicacy of detail and a truth to nature that would defy the chisel, the burin, or the needle, for they are imprints from the originals, and not the work of hands. The ware itself possesses a beautiful glaze, almost amounting to a transparency, and the lovely tints it assumes under the action of the light resemble the reflections from a sheet of pure glass. In this manufacture America has again come to the front, and it is asserted by a northern daily contemporary that "everything known to us is completely put in the background by this invention. It is not for the beauty of the ware itself, however, that we direct attention to it so particularly, though it must strike the

observer at a glance, but for this combined with the applicability of the material to art purposes under the process patented by Messrs. Low." As works of art these specialties deserve the highest commendation, and the merits of the articles exhibited were unanimously acknowledged by the numerous visitors to the stand. Major Cryer is to be congratulated upon the success achieved, a gold medal valued at £10 having been awarded to Messrs. J. & J. C. Low, for the best art tiles of American or English manufacture.

GERMANY.

Sample room for American goods at Crefeld.—Apartments for reading and exhibition rooms, connected with the consulate at Crefeld, Germany, have been opened, where samples of American manufactures and products, and the various publications of the United States devoted to the interests of our export trade, will always be accessible to the public. The consul or vice-consul, when not officially engaged, or some of their assistants, will be always on hand during the business hours to give information relating to the goods on exhibition. J. S. Potter, esq., formerly of Stuttgart, is consul at Crefeld.

American Wine in Germany.—Consul Bullock, of Cologne, in a dispatch to the Department, concerning the Rhine vintage of 1880, says:

There has recently appeared in the German newspapers the mention of the arrival at Bremen of a large shipment of California wine, destined for a firm in Mannheim. The newspaper in which I saw this statement said that it was the "first instance on record of a large shipment of American wine to this country, and might finally lead to results of great consequence to the wine producing interests of Germany." It is quite within the bounds of probability that some of this wine, in a "doctored" form, may find its way back to the United States and be sold as the product of the famous vineyards of the Rhine-Gau!

Grain deficiency in Germany.—Mr. Schoenle, commercial agent at Geestemünde, says that in many districts of Germany, especially in Silesia, Posen, and East and West Prussia, there has been a heavy destruction of crops by floods and hail and thunder storms. As the harvests in Russia and Hungary are reported to be but middling, these countries will furnish less than their usual quota of grain for exportation to Germany, so that the United States will have to make up the greater part of the deficiency. In fact, the United States may be considered the most reliable granary from which Europe will henceforth have to draw her supplies of breadstuffs.

Surplus of skilled Labor in Bremen.—Consul Grinnell, of Bremen, in a recent dispatch to the Department of State, writes as follows concerning the state of labor in that city:

It came to my knowledge a few days since, through preparing a contract for the employment of seven wood-sawyers and cigar-box makers, to go to one of the Southern States, there to work for 75 cents per day and the use of an acre of ground, that there are here many skilled workmen, of good character, to be had very cheaply on contract, by advancing their passage money. In fact, for several days after the above named contract was executed, the consulate was invaded by applicants for employment in the United States, carpenters, bricklayers, cigar-makers, &c. These trades receive, when employed, about 90 cents in the summer, and 75 cents in the winter, per day. Having seen frequent complaints in the New York journals and periodicals of a scarcity of skilled labor in the United States, I thought it proper to submit this to the Department.

American Oysters in Germany.—The experiment of transplanting American oysters to the Little Belt, from Graveshovod to Holkhovod, as well as to the south of Faroe Islands, appears not to prove fully successful. as a recent investigation of these oyster beds by K. Möbius, professor

of zoology at the University of Kiel, leaves serious doubts whether these imported oysters will spawn and multiply in German waters. Under these circumstances the exportation of American oysters to Germany should be improved by American oyster dealers, as the oyster is regarded in Germany as an article of luxury, and is very costly at Berlin and other large interior cities, and is only served on special occasions. I am of the opinion that the American oyster would find a ready market in Germany, and dealers would find it a profitable undertaking to send oysters to German markets.—*Extract from a report of Commercial Agent at Geestemünde.*

The Rhine Vintage of 1880.—The careful estimates of experienced dealers and growers are most unfavorable. It is not thought probable that the vintage of the Rhine and its tributaries for 1880 will exceed one-fifth of an average vintage.

Some localities favorably situated and partly protected from the cold winds may yield one-third of an average vintage, and it is claimed that some favorably situated young Riesling vineyards may do even better. But these favorable exceptions are insignificant as compared to the large wine producing surface of Germany.

The Rhine-Gau, a part of Rhenish Hesse, a small part of the Palatinate, and the middle and lower districts of the Moselle will yield a vintage probably worth little more than the saving; but all the rest will be almost a total failure.—*Notes on the Wine Crop, by Consul Bullock, of Cologne.*

Cremation in Germany.—In my annual report for 1876 I mentioned that the first practical step toward cremation as an authorized system of disposing of dead bodies had been taken in Germany, by the municipal authorities at Gotha. A cremation furnace was constructed in the city cemetery, and the first body was burned on the 10th of December, 1878. Since that date 30 bodies have been burned, of which 17 were disposed of in this manner during 1879, and 13 thus far during the current year. Three of the bodies were brought from Dresden, 3 from Munich, 2 from Leipzig, 1 from a city so remote as Vienna, 11 were the remains of residents of Gotha, and the remaining 10 were from different places in Germany. It is noteworthy that most of those who have chosen cremation instead of burial belonged to the nobility, the army, and the learned professions. As the public mind becomes more familiar with this system of disposing of bodies, the prejudice against it seems to be disappearing. It is said that the principal reason that cremation is not more widely followed results from the very high charge for transporting a dead body on the German railroads. The expense of burning a body is only about \$16.—*H. J. Winser, United States Consul at Sonneberg.*

Steam communication between Amsterdam and New York.—Under date of December 4, 1880, Consul Eckstein, of Amsterdam, informs the Department that a project was then on foot to establish direct steam communication between that port and New York. On condition of a guarantee fund of 125,000 francs per annum for two years being raised to indemnify the Royal Netherland Steamboat Company of Amsterdam for any possible loss, it has agreed to furnish such direct communication. A number of firms in that city, engaged in the import and export trade with the United States, had subscribed for the greater part of the sum mentioned at the date of the consul's writing, with a good prospect for the speedy subscriptions for the whole amount. The company engages itself to furnish three steamers for this service, and to make trips every

three weeks, or seventeen round trips per annum. The tonnage of the steamers intended for the service will be 1,400 to 1,600 tons registered measurement. The line will be specially designed for freight traffic, but steerage passengers will be accommodated. It was expected at the date of the consul's dispatch that the steamers would begin running in March or April ensuing, and it is confidently expected that a large increase in the trade between Amsterdam and the United States will result therefrom.

German Emigration.—The emigration movement to the United States has assumed colossal proportions this year. According to the imperial statistical tables, 50,442 German emigrants have shipped for the different ports in the United States during the first six months of the year 1880. There is hardly any doubt but the emigration to the United States will continue in about the same proportions for the next year, as there is no prospect that the conditions which underlie this large exodus from the fatherland will undergo any change in the near future. There are different factors which are at the bottom of this lately increased emigration, such as military compulsion, want of free movement, increased taxes, failures of crops, general depression of business, and ecclesiastical strifes; but the "true inwardness" of, and the intrinsic motive power for, this extraordinary emigration is to be found in the simple fact that there is an instinctive trait in man to better his situation and that of his family, and as the greater part of the German people can, by their labor, acquire only the absolute necessities of life without the prospective view of being able to lay aside some savings for "rainy days," they naturally cast their eyes to the country where *labor is well paid in proportion to the cost of living*, and this motive is the true solution of the question of emigration to the United States.—*Extract from the annual report of Commercial Agent Schoenle, at Geestemunde.*

Royal High School for instruction in the manufacture of textile fabrics, in Crefeld, Germany.—As has been previously mentioned, much attention is now given to the manufacture of fancy goods in this part of Germany, and especially to the subject of the art of designing and pattern making. Fresh interest has been stimulated in this interesting subject by the founding in Crefeld of an institution, to be under state supervision, for the instruction of those who intend pursuing the business of manufacturing of textile articles. In this institution every branch of textile industry is represented, and all kinds of looms and new inventions will be exhibited and tested in a practical way. This institution is to be called "Königliche Höhere Lehranstalt für Textil Industrie," or "Royal High-School for Instruction in Textile Industries." It will contain, besides, weaving-sheds, dye-works, finishing-works, department of designs, &c. There will also be a corps of eminent and practical teachers, and a library, museum, &c., attached to it. The building which is to be erected for the purpose will cost 500,000 marks, or more. Of this sum the Kingdom of Prussia will contribute 300,000 marks, and the city of Crefeld, where it is to be located, will contribute 200,000 marks, or a sum sufficient to finish the structure. The cost of maintaining this great school will be shared equally by the Kingdom of Prussia and the city of Crefeld. It is to be the largest and most important school of the kind in Europe.—*Extract from the annual report of Consul Potter.*

German Export Statistics.—An important law of the year 1879 went into operation at the beginning of the current year, the object of which is to

secure full and complete statistics of the quantity and kind of merchandise exported by Germany to foreign lands. Under this law, every exporter is required at the time of delivering his shipment to the railroad or other vehicle of transportation to hand in therewith, apart from the bill of lading, an accurate statement showing the character and kind of the goods exported as well as the weight of the same. The statement must be made out on a form which is prepared and sold by the government at a low price. Having described the merchandise as above, and given the weight, a statistical stamp must be placed upon the statement to the amount of 5 pfennige (about $1\frac{1}{2}$ cents) for every 500 kilograms (about half a ton) or part thereof. These statements are collected at the custom-houses at the seaports and on the borders, and they must necessarily control quite exactly the amount of exports, thus supplying a desideratum in the matter of obtaining official statistics of exports from Germany which has long been felt. Heretofore Germany has had no method of controlling the amount of her exports, and even the partial returns which are made up at the United States consulates of the declared value of merchandise sent to America have been sought for with avidity by the government authorities as an indication of the course of trade. But while the commercial classes favor the new law, they consider it something of a hardship that they must not only spend the time in giving the statistics to the government, but must pay a statistical tax as well, in the form of a stamp, for the expense of recording the facts.—*From the annual report of Consul Winsor, of Sonneberg.*

Bi-metalism in Germany.—It will, doubtless, be remembered that much interest was excited last year by a discussion of the question of a double currency standard in Germany. The gold standard still only nominally exists. The imperial treasury has about 3,796,400 pounds of fine silver for sale, consisting, for the most part, of thaler pieces, which are in circulation. Down to May, 1879, Germany had sold 7,104,898 pounds of silver, and then the sale of this metal ceased, on the ground that the low price which had been ruling for a long time was causing unnecessary loss to the state. Although Germany would take no part in the monetary Congress held in Paris in 1878, in order, as was said at that time, that no shadow of doubt should be seen as to her determination to abide by a gold currency, this step of withholding her silver from sale was widely accepted as an indication that the imperial government was about to yield to the arguments of many powerful states which favor the fixing of a standard relation between gold and silver. To quiet the public mind on this important question, it was deemed necessary at the opening of Parliament this year to officially declare that the sale of silver had ceased solely for the reason named, and that as the silver could not now be sold at a profit, the thaler currency would continue to circulate to meet the requirements of business. No provision has been made in the estimates of the current fiscal year for covering the cost of prosecuting the monetary reform, and there is every probability that matters will remain precisely as they are for an indefinite period. In business circles much dissatisfaction is expressed at the course which the imperial government has followed. It is argued that the sale of silver should have continued, even at a sacrifice, in order that the gold currency should be perfected without further delay. Should any serious political complications occur, the continuance of what is really a double currency would have injurious consequences. At present, however, the business world must be satisfied with the assurance that the cessation of the sale of silver is only a temporary measure, and that

the gold currency, upon which all commercial transactions with foreign lands during the last five years have been based, will be perfected and maintained. In compliance with a decree of the federal council of the 23d of October, 1879, 5,000,000 marks, in 20-pfennig pieces have been this year withdrawn from circulation and recoined into 1 and 2 mark pieces. Propositions are pending for decreasing the amount of paper money and increasing the amount of silver.—*H. J. Winser, Consul at Sonneberg.*

Imitation of American Manufactures in Germany.—The higher prices which American manufacturers have asked during the past year for hardware—an increase of from 25 to 40 per cent.—in connection with the heavier duties imposed by the German tariff, have had the natural effect of diminishing the trade in metal wares to some extent. There has been a large falling off in the sales of lacquered kitchen utensils—pots, kettles, saucepans, &c.—and, indeed, in every variety of house-furnishing articles. The business in American mechanical toys has been likewise unsatisfactory, dealers asserting that purchasers have become shy of such toys on account of their liability to derangement and the cost of repairing them. The demand for Connecticut clocks has also waned of late, in consequence of an overstocked market.

The trade in American hollow glass, which was quite brilliant a year or two since, on account of its attractive forms and fine white quality, has now almost ceased. This result is attributed to the efforts of the glass manufacturers on the Rhine, who have spared no pains to imitate the products of their American competitors in regard to the fashion and quality of the ware; and, being able to supply the demand more rapidly and more cheaply, have regained control of the market.

Indeed, the fact ought at once to be recognized that not only glass but every other product of American skill and invention which is easy of imitation will quickly be reproduced in Germany. From time to time, in every town of the slightest pretension to consideration as a center of the local industry, there is held an exhibition, under the auspices of its *Kunst und Gewerbe Verein* (Association for the Promotion of Art and Industry), for the purpose of getting together the novelties of the productions of foreign lands which are in any way affiliated with its own manufactures. At these exhibitions, which are freely open to all artisans and factory operatives, for whose benefit they are held, minute examinations are encouraged of everything which may be displayed. In this way comparisons are made of the foreign articles with that of home manufacture, and new ideas are seized upon for adoption and imitation. Precisely by this method has many a novel device and useful invention to which American genius has given birth been taken possession of by a German craftsman and copied with more or less accuracy, to the great detriment of the original inventor. As a general thing, piratical imitations of this sort are admittedly inferior in every point of merit to the American original; but, nevertheless, they serve the main purpose of checking the demand for the genuine article.

Among other counterfeit American wares now sold in Germany may be named field and garden implements, ice machines, refrigerators, petroleum cooking stoves, water-closets, iron bedsteads, washing machines, and almost an endless variety of small useful "notions"; in fact, as I have said, nothing which can be easily or profitably imitated is exempt from piratical attack. This systematic imitation can scarcely be prevented. I simply advert to it as a notorious fact against which our manufacturers have to contend. Its effect, without any doubt, is to con-

fine the trade in American wares mainly to the sale of novelties and to some articles which are practically inimitable by the enterprising German adapter and copyist.—*From a report by Consul Winsor, of Sonneberg.*

Business situation in Germany.—Consul Bullock, of Cologne, makes the following note concerning the business situation in Germany during the year 1880, and the effect of the business revival in the United States on European trade:

Since the beginning of the current calendar year there has been a marked change in the general situation of trade and industry in Germany. The year was ushered in by a tide of rising prices in the chief products of the mining and manufacturing industries which stimulated every branch of trade. Stock speculation was indulged in on the Bourse to an extent not equaled since 1873, and the shares of iron manufacturing and mining companies rose to points they have been unable to attain since the French milliards were poured into the coffers of Germany. The shares of banks and railroads partook of this upward movement in proportion as they were supposed to be interested in the reviving industries. But this, for the most, fictitious and speculative prosperity was not to last long. Orders from the United States for the products of the iron industries did not keep pace with the rising prices and increased production, and it was soon discovered that, unless orders increased, there would soon be an over-production. The difficulty had to be met either by decreased production or lower prices. In either case the downward movement would have begun.

An international concert of action among the producers was the only thing that could meet the emergency and check the decline in prices; but this doubtful expedient, so much talked of, was not attainable, and consequently both prices and production declined.

The reaction was not altogether unexpected, but yet it was sudden enough to catch not a few of the unwary, who had forgotten or not profited by the lessons of the general business collapse of 1-73. Prices have not dropped to the low rates they reached during the period of depression, and among producers generally the opinion prevails that the reaction is but temporary and is attributed to a large degree to the mistakes of the producers themselves in advancing prices to points which checked the demand.

As the improvement in business followed closely after the changes in the German tariff laws, it was frequently asserted by the advocates of the higher duties imposed by the new tariff that the general improvement was in part attributable to the "tariff reform." But I do not think this opinion was seriously entertained by many. It would be a sufficient answer to this assertion to point out the fact that in other countries where no changes in the revenue laws have been made, and where the same general conditions exist, the improvement in business was as great as in Germany. Now, however, that the improvement has not kept up and met the very high expectations of the beginning of the year, it is generally asserted that it was the result of "American speculation"; but a number of the boards of trade reports admit that the impulse of the business improvement came solely from the United States, where, as these reports say, the resumption of specie payments and a sound financial condition, followed by abundant harvests, inspired capitalists and business men with confidence in the future and caused new enterprises to be undertaken, which created a market for the surplus products of Europe.

Manufacturing prejudice against American Products.—From time to time our consuls in many countries in Europe, especially in Germany, are called upon to refute certain carefully prepared reports in public prints calculated to prejudice the popular mind against American products. This is especially the case where our goods come into successful competition with local products or manufactures. While the publication of such slanderous reports is to be regretted, and while some margin should be allowed to those whose interests are threatened by American competition, the final result can only be favorable to our products, especially our food products, which are not only the cheapest, but are the best in the world. Time was when such reports could have been published with impunity, and when they would have passed uncontradicted, but the energy and watchfulness of our consuls, who now challenge these slanders before the ink is dry wherewith they are published, will effectually checkmate all such disreputable commercial procedures.

Our business communities must lend their immediate aid to our consuls in stamping out all calumnies against American products and on the other hand to reforming any abuses if unhappily any such should exist on our side.

As a sample of the vindictiveness and utter abandon which characterize this system of slander which prevails in many parts of Germany, the following report from Consul Potter, late of Stuttgart, is herewith given. It will enable our manufacturers and exporters to appreciate the many obstacles which they may expect to encounter in their efforts to extend our foreign trade.

In transmitting the slanderous report, Consul Potter says:

Recently, paragraphs have appeared in different newspapers published in Germany which will greatly injure the export trade in American lard, unless the statements made in such paragraphs are, after investigation, authoritatively contradicted.

As a sample of the statements referred to, I have cut from a Laupheim publication a paragraph, which is herewith inclosed, with translation.

If the subject is given to the press, perhaps public information might follow which would be efficient in checking the prejudice which such statements are likely to create on the continent against important articles of American export.

AMERICAN LARD.

A correspondent from Chicago writes to "Der Verkündiger," an official newspaper published in Laupheim Württemberg, as follows:

"You are perhaps not aware that in the stink factories at 'Globe Station,' near Chicago, large quantities of lard are produced from animals which have died from disease, and that much of this lard is exported to England and Germany. It is said that it is only used for lubricating purposes; but who can tell what disposition is made of it by the dealers? This lard is as white as snow and is odorless; and it is possible that many poor persons employ it for culinary purposes, who have not the remotest idea of how it is manufactured.

"Every day two trains of ten to twenty cars, laden with the carcasses of animals which have fallen in the city and in the neighboring cattle-yards, such as horses, cattle, pigs, and dogs, arrive here with the supply of raw material. The fat obtained is purified by means of steam; the residue, including the meat, is taken to neighboring factories, where it is made into guano. In order to make the imitation more perfect, chicken feathers, which can be had in large quantities at all the hotels, are mixed with the mass.

"The stench produced by these factories is fearful. The neighborhood of Chicago is one immense 'stinkerei.'"

INDIA.

Steam communication between the United States and India.—I desire to point out to American merchants the desirability of establishing a line of steamers from New York to Bombay, touching at Liverpool. I think a monthly line would answer at first, the steamers leaving New York for Liverpool and Bombay, and *vice versa*, at regular dates, so that shippers in the United States and India could always rely upon the steamers. Freight loaded in New York for Bombay could go in the bottom of the boats, and freight loaded here for New York in like manner, in order to avoid disturbance *en route*. This appears to me to be the one thing needed to build up a large trade between Bombay and the United States. Shippers in the United States would ship direct by such a line, and very many, native merchants particularly, would ship their produce from here to the United States direct, instead of having their merchandise transshipped at Liverpool or Glasgow, as at present. Somebody will start this line of steamers, and I don't see why American merchants should not take the matter into their own hands.—*Consul Farnham, of Bombay, in his annual report for 1880.*

* For a refutation of this assertion, see Report of the Department thereupon.

MEXICO.

Mexican Railways.—I have the honor to report that on the first instant was inaugurated the construction of the railway from Matamoras to Monterey. In my dispatch No. 118, dated August 4 last, I reported as to this subject, giving a translation of the subvention granted in favor of this enterprise by the Mexican Government. Since that report a company has been organized in this city, of which Mr. James M. Belden is president, for the purpose of building the road and receiving the subvention in aid thereof. A portion of the route has been surveyed, some material has been received, and more ordered and to arrive soon. It is expected that the gentlemen in charge can build the first ten kilometers, and then, receiving the subvention, therefor, proceed to build another ten kilometers, and thus construct the road.

In addition to my comments in my dispatch above noted, it may be said that this line would from its completion to Reymosa, some 30 miles up the river, command a considerable business, at least three times as much as any road from this frontier into Mexico, except perhaps a through line from the United States to the interior of the republic. With each town above Reymosa, as Camargo, Mier, and others, this business would be increased. Near Mier it will probably turn towards Monterey.

In my dispatch No. 120, dated August 24, 1880, I have shown the large amount of the bonded goods from the United States to Mexico which pass through this city, and which might go by this road. The same report also showed that 21 per cent. of the whole trade in American goods between the two countries passed through here, as compared with 13 per cent. with all the rest of the frontier. From these statistics it would appear that the road just begun would command a much larger immediate business than any similar road on this border.

I am requested to state that the managers of this enterprise request the assistance of capitalists from the United States, and they offer the most liberal terms for such assistance; that every opportunity to investigate the expense and probable profits from the enterprise will be given, and that the present managers would either accept a loan sufficient to purchase the iron and rolling stock and give therefor a first mortgage on the whole road, subvention, &c., and the individual guarantee in addition thereto, or would assign the contract over to any responsible company. While I do not desire to recommend this or any financial project, yet I would suggest the careful investigation of this subject by such persons as may be interested in the subject of railways in Mexico.

I can state as my own opinion that the revenues of this custom-house, if devoted to such a purpose, might easily pay this subvention, besides the local, military, and other charges provided for here. This could be done in orders on the custom-house, which would bring about 70 cents on the dollar, and would sell readily to merchants desiring to make importations. General Gonzales, who has been lately inaugurated President of Mexico, is a native of this state and is friendly to the enterprise, while he is also on the best of terms with the state authorities and Mr. Belden, the manager of the project. Mr. Belden himself stands high in this section as a business man, and is peculiarly fitted by his intimate and friendly relation with the chief authorities in this state to get such aid and support as can be given.

As for myself, I have not the slightest interest in this matter beyond a friendly desire to see this section develop, believing that thereby the

cordial relations between the two countries can be best increased and the commercial interests of the United States enlarged and extended.—*Report by Consul Sutton, of Matamoras.*

NORWAY.

Our Trade with Norway.—Norway has but few export articles suitable for the American market, and it was an unexpected stroke of fortune last summer for Norwegian exporters to receive orders for ice from ice dealers in New York. Twenty cargoes, containing 12,500 tons of ice, were shipped to the port of New York from the well filled storehouses in this district, which generally supply the English market. The average price was \$7 per ton, the ice delivered in America. Owing to the present low rates of freight, several more cargoes will be shipped to New York this year.

The importation of American products has as usual been very large, but as the imported goods reach this country principally through the intervention of other countries, it is impossible to report what and how much the United States sends to Norway. American apples find ready market here, and are imported every year in large quantities. American stoves are in great favor, and the native foundries which reproduce the same models sell them by hundreds at cheaper prices than the imported ones can be had.

Other American inventions are much in use here. This city has adopted without delay the telephone, introduced by the International Bell Telephone Company of New York, whose branch establishment here now numbers 160 subscribers a few months after opening business.

Among the vessels carrying petroleum here from New York was the American brig J. B. Brown, of Portland, Me., whose cargo had the value of \$14,618. It was the only arrival of an American merchant vessel at this port since 1873. She cleared for Greenock, Scotland, with a cargo of lumber. One other American vessel, which had carried petroleum from New York to Bergen, is now loading at the port of Christiansand, within this district, with timber for Cardiff.—*Extract from report of Consul Gade, of Christiania.*

PERU.

Duties on export of Nitrate of Soda.—The duties on nitrate of soda from the port of Iquique from 1830 to the present time are specified below:

From 1830 to October, 1873, 4 cents per quintal of 100 pounds.
 From October, 1873, to June, 1875, 15 cents per quintal of 100 pounds.
 From June, 1875, to January, 1876, 30 cents per quintal of 100 pounds.
 From January, 1876, to June, 1876, 60 cents per quintal of 100 pounds.
 From June, 1876, to October, 1876, 44*d.* per sol of 100 pounds.
 From October, 1876, to November, 1879, 50*d.* sterling per 100 pounds.
 From November, 1879, to October 23, 1880, \$1.50, silver, per quintal of 100 pounds.

From October 23, 1880, \$1.60, silver, per quintal metrique.—*J. W. Merriam, Consul.*

SPAIN.

Spanish art Exhibition.—The Spanish minister at Washington has informed the Department of State of the regulations for the general art exhibition which is to be held at Madrid in April next, and which will be open to the artists of all nations. The time during which objects

for exhibition may be presented will be limited to ten days, from the 1st to the 10th of April, inclusive.

Notes on Spanish Trade.—Consul Scheuch, of Barcelona, makes the following references in regard to the trade at that port for the first six months of the present year: All cotton imported at Barcelona is for actual consumption and not for transshipment. The total receipts of cotton from the United States during the semester—six months under review—have been 82,297 bales, representing in value about \$5,761,000, a shortage of 15,637 bales against the corresponding period of 1879. This decrease I can only attribute to the use by the manufacturers of “Bombay” cotton, an inferior and cheaper article. The receipts from Bombay were 33,200 bales (of about the same weight as bales from the United States) against only 2,550 bales during the same corresponding semester, 1879. No doubt as Spanish manufacturers have daily more and more to compete with American and English fabrics, they are foolishly seeking and employing cheaper raw stuffs.

Business during the six months just closed has been very good, and the crops, especially of wheat in Castilla, have been better than for many years, so that little importations of that cereal are expected this fall from the United States.

The outlook for wine in Catalonia, the principal product of this province, is good; still prices will be very high; in fact are so now, on account of the enormous demand for Catalonia wines from France, to manufacture French or Bordeaux wines. I understand that more than one-half of the vineyards are already sold to French agents and speculators.

SWEDEN.

Steam communication between Sweden and the United States.—The managing director of the Stettiner Lloyd has informed Consul Oppenheimer, of Gothenburg, that that company intends to have its steamers call at the port of Gothenburg regularly on their outward voyages to the United States, and on the return trips as often as circumstances will justify. This will insure direct monthly steam communication between Gothenburg and New York, and cannot fail to have a beneficial effect upon the trade relations of both ports. The first vessel of this line will, it is thought, leave Gothenburg for New York early in December. It is thought that emigrants from Sweden for the United States, who now go in English lines *via* Hull, will avail themselves of this new line and sail direct from Gothenburg to New York.

SWITZERLAND.

American Provisions in Switzerland.—Consul Adams, of Geneva, writes as follows concerning the growing importations of American provisions into Switzerland:

“I inclose, herewith, a notice from the *Journal de Genève* of the growing importation of American provisions and its effects on the Swiss market. In the same connection I learn that the value of choice cattle raised in large numbers in Switzerland for the Paris and French market has been sensibly diminished by the importation of American cattle and fresh meat. The sale of preserved meats and fruits from the United States is so well established and advertised that it may be left to take care of itself; but it would, I think, be worth while to call the attention of manufacturers of butter and cheese to the possibility of effecting larger sales in Central and Southern Europe. Good butter, particularly,

is a want in Southern Europe. I learn, too, that a profitable market may be found here for the more nutritious brands of American flour."

Translation from the Journal Genevieve.—"Every year the Americans increase their formidable competition with the industries of Europe. To speak only of what concerns ourselves, all know the serious injury to the Swiss watch manufacturers, who formerly counted the United States among their best customers. The same result appears in the trade in butcher's meat. There is not a family to-day which does not frequently buy one of the so-called "Chicago" cases containing salt beef or pork of an excellent quality. And now, thanks to powerful coolers, America is sending to Europe quantities of fresh meat which is said to arrive in good condition. Shipments have even been made of living cattle, but the cost of transportation has been found too great."

"The *fruitiers* of Gruyere themselves are not beyond this American competition, and are in danger, too, of losing their American customers. The farmers of the United States, who farm immense estates, manufacture cheese and butter on a vast scale, and supply not only America, but certain cities of Europe. The following figures will give an idea of this new industry: In 1879 the United States produced 300,000,000 pounds of cheese and 1,500,000,000 pounds of butter."

Swiss and American Watches.—Consul Mason, of Basle, in his annual report for 1880, gives the following interesting account of the manufacture of Swiss watches for the United States market, and the successful competition of American watches with the foreign articles:

In 1873 the consular district of Basle sent to the United States watches and watch material, the declared value of which was \$1,974,049; in 1874 this export declined to \$1,804,219; in 1875 it was \$1,200,000; in 1876 it amounted to \$897,602; and in 1877 to only \$574,674.

During the early part of 1877, however, the report of the Swiss commissioner to the Centennial Exhibition at Philadelphia was published, which first taught the Swiss watch manufacturers the real cause of their declining trade with the United States. It was not merely the result of "hard times" and a diminished demand for luxuries in America, but, as the report showed, the home manufacturers, by the use of ingenious machinery, had absolutely taken the manufacture of all medium grades of watches into their own hands. An ordinary watch could be made cheaper and better in the United States than in Switzerland. The commissioner was abused for his candid report, but the facts remained as he had stated them, and since 1876 some important changes have taken place in the Swiss watch manufactures for the American market. Whereas, prior to 1876, all the different grades of watches were exported in symmetrical proportion, the demand now is limited mainly to watches of extreme high and low classes. While there is, as heretofore, a limited market for the costly and elaborate chronometers which are produced only in Europe, the vast bulk of the Swiss export has been since 1876 confined to cheap and inferior qualities, encased in oroide and nickel cases, and brass plated with silver or washed with gold. Lotteries, gift-enterprises, and auction-stores in the United States absorb the bulk of this import, and while the American demand for plain, serviceable watches of moderate cost is now mainly supplied by the home manufacturers, the Swiss makers compete successfully for the trade in the cheapest qualities. Great skill is employed in making these goods outwardly attractive, and they are supplied to the American trade in large quantities and at prices surprisingly low.

Skilled workmen, at wages less than are paid to manual laborers in the United States, the constantly increasing use of improved machinery, and invoices which from the nature of the case practically defy consular investigation and supervision, have enabled the Swiss watch-makers to push this competition so successfully since adapting their goods to the altered conditions of the American demand, that in 1878 the export of watches and watch material from the Basle district (including its dependency, the agency at Berne) amounted to \$674,102; in 1879 this increased to \$906,201; and for the first three quarters of 1880 to \$1,233,031. As the heaviest exportation of watches to America occurs during the last quarter of the year, it is more than probable that the aggregate export from this district for the current year will fully equal that of 1873 and the prosperous years immediately preceding it. Shipments are at present brisk, but the invoices average less in quantity than a month ago.

Swiss-American commerce.—The *Basler Handelszeitung* comments upon the recent letter of the Secretary of State on the commercial relations of the United States as follows, and which has been translated and forwarded by Consul Mason, of Basle: During the depression of the last few years, which lasted with extraordinary intensity, there often prevailed in commercial circles the view that an impulse to amelioration could only be given by the United States. This view has indeed proved to be righteous, and at a time when the warehouses of both hemispheres found themselves at a point of depletion such as had not been seen for a long time, and when an excellent harvest, coinciding with an almost unheard-of failure of crops in Europe, bestowed on the United States a power of purchase that seemed to justify our indulgence in most flattering expectations. If, however, all the suppositions are true which the Secretary of State, Mr. Evarts, entertains in his recently published report concerning the commercial relations of the United States in the year 1879, we would be forced to sadly conclude that the return of better times in the United States will by no means give as much commercial relief to Europe, and particularly Switzerland, as we had been led to hope.

Mr. Evarts furnishes proof that the augmented imports from Europe during the last year, as usually happens when business advances, consisted chiefly of articles of luxury, showing for the three most important export countries, viz, England, France, and Germany, an increase of only \$42,000,000, which, in normal times, would scarcely be noticed. Mr. Evarts gives, moreover, reasons to believe that the United States have not only emancipated themselves from Europe with regard to the most important branches of industry, but also successfully compete with it in its own markets. "The continual decline of the imports from Europe is," says he, "less a consequence of the depression which likewise took place in America than of the rapid growth of our home industries."

As concerns our country (Switzerland) the reports of the United States consuls, Mr. Adams, at Geneva, and Mr. Byers, at Zurich, show that the hopes that were built on the increase of the export of the year 1879 were of too sanguine a nature, since the United States has become more and more independent of foreign sources of supply, especially with regard to the two chief articles, watches and silk goods. They insist, besides, upon the circumstance that the respective augmentation of European imports would have scarcely been noticed in ordinary times.

(Here is quoted in full the statement of Consul Byers, as published in the letter of the Secretary of State.)

The *Handelszeitung* continues as follows:

"The views which Mr. Byers holds out to us in his report with praiseworthy candor are by no means of a pleasing nature, and our silk manufacturers will do well to look out in good time for other markets for their goods. On the other hand, we Swiss have not exactly any motive to be discouraged, seeing that the Americans themselves do not indulge in the hope of attaining any extensive commercial relations with Switzerland. What we now buy from the United States is chiefly corn, pork, and petroleum, and it is very questionable whether this import will continue next year, for, by removing the production of corn to the West, the freight will become dearer, and, as for petroleum, Russia already competes with the Union. Agricultural implements we can import from England quite as cheap as from America, and, besides, we ourselves make some of them of excellent quality. The import of anthracite coals, on which such bright hopes were founded, remained a mere experiment and has been definitely abandoned. Likewise will it be a long time ere we, as Mr. Consul Adams at Geneva hopes, import from America beer,

cheese, and spirits. At all events, we must look sharp and try above all to beat our competitors by furnishing a superior quality of merchandise, since an American once told the author of this article, 'There is room for Swiss manufactures only at the top'; which means, if they provide praiseworthy goods we can sell them in the United States, otherwise not."

VENEZUELA.

Railways and Telegraphs of Venezuela.—Mr. Baker, minister resident at Caracas, transmits the following notes concerning Venezuelan railways and telegraph lines:

I have thought it might be useful in its way to bring together, as accurately as I could, the brief statistics of Venezuela under its relation to railways and telegraphic lines.

1. Strictly speaking there is but one railway in Venezuela. It is of very narrow gauge and extends from Tutacas on the northern coast to the mines of Aroa, a stated distance of 113 kilometers, or about 70 English miles. It was constructed by an English company, in reference to the mines in question, but is also employed to bring coffee and other produce to the coast. There is, besides, a horse-railway, said to be about 1½ miles long, between La Guayra and Maiquetia.

2. As to the extent of telegraphic lines, the following table was obligingly furnished me by gentlemen connected with the telegraph office in this city:

	Spanish miles.
Caracas to La Guayra	21
Caracas to Petaro	6
Caracas to Los Teques	18
Teques to Victoria	30
Victoria to Maracai	18
Maracai to Valencia	33
Valencia to Porto Cabello	42
Valencia to Tinaquillo	33
Tinaquillo to San Carlos	33
Valencia to Montalbran	33
Montalbran to Nirgua	27
Nirgua to San Felipe	30
San Felipe to Yaritagua	36
Yaritagua to Barquisimeto	24
Guaira to Macuto	3
Total	387

The foregoing total for telegraphic lines is equal to about 355 English miles. So the summation for the country is: Length of railway about 70 English miles; length of horse-railway about 1½ English miles; length of telegraph lines about 355 English miles.

This exhibit is certainly meager enough, especially when it is remembered that it is the showing for a country which is more than nine times the size of the State of New York, and whose history began at Cumana ninety years before the founding of Jamestown, and one hundred and three years before the Pilgrims landed at Plymouth.

3. As far as I am advised, the relation of this country to submarine cable lines is as follows: The submarine cable reaches the Islands of St. Thomas, Porto Rico, Martinique, and Trinidad; and I am informed that cablegrams from all four of these points are forwarded to Caracas; the first three of them being at distances of several hundred miles from the Venezuelan coast, while the last is separated from the mainland by a strait which is only a few miles wide at its narrowest point. It is presumable that some day this narrow gap will be cabled, and that Venezuela will be thus brought into full submarine connection with Europe and North America,

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